

# *Intuitive Classroom Technology*

6815 216<sup>th</sup> Street SW

Lynnwood, WA 98036-7363

425-774-6600

To: South Whidbey School District  
5520 Maxwellton Road  
Langley, Washington 98260

Date: March 17, 2014  
Quotation Number: 14-070  
Project: Langley Middle School Multipurpose  
Room

Attn: Tom Adkins

System: Audio / Visual

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## Multipurpose Room A/V System

### KCDA Equipment:

<u>Qty.</u>	<u>Model #</u>	<u>Description</u>	<u>Price Each</u>	<u>Extended</u>
(1)	LER-3522	Equipment Rack – Floor, 35U, 22" Deep	785.03	785.03
(1)	LFD-35V	Front Door – Vented, 35U	367.31	367.31
(1)	PS-8R II	Power Conditioner/Sequencer	337.82	337.82
(1)	ACS-1512	Power Strip – 15-Amp (12 Outlet)	161.76	161.76
(2)	AFP-2	Blank Rack Panel – 2U	16.81	33.62
(4)	SVP-1	Vent Rack Panel – 1U, Steel	17.35	69.40
(1)	UDE-214	Economy Utility Drawer – 2U	156.07	156.07
(1)	Nexia CS	Digital Signal Processor	2,649.96	2,649.96
(1)	RED-1F	Remote Ethernet Device, Flush Mount	609.96	609.96
(1)	DN-F650R	SD/USB Solid State Recorder/Player	845.58	845.58
(2)	P3500S	Amplifier – 590W+590W (4 Ohm)	753.78	1,507.56
(4)	ew152 G3	Wireless Head-Worn Microphone System	662.95	2,651.80
(1)	G3FRONTKIT4	Antenna Splitter Kit – Front-Mount Antennas	662.95	662.95
(1)	WL85	LCD/CFL J-Box Receiver	150.55	150.55
(1)	78944PSRP	Connection Block and Power Supply	70.69	70.69
(1)	282D	Designer Emitter	19.28	19.28
(2)	IF2112M/*	Speaker System – 12", Full Range, 2-Way	1,151.58	2,303.16
(1)	CW118V	Subwoofer – Single, 18"	753.78	753.78
(1)	SM58S	Cardioid Dynamic Microphone, On-Off Switch	132.60	132.60
(1)	EXM-25	Microphone Cord – 25'	30.03	30.03
(1)	MS-12C	Microphone Floor Stand	66.35	66.35
(1000')	292	2-Conductor with Shield, 20AWG Cable	123.42	123.42
(1000')	226	2-Conductor, 14AWG Cable	266.48	266.48
Total KCDA Equipment				\$14,755.16

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Page 2 of 4

## Multipurpose Room A/V System (continued)

### KCDA Estimated Labor

<u>Hours</u>	<u>Labor Designation</u>	<u>Cost/Hour</u>	<u>Extended</u>
16.0	Field Project Management (System Testing)	101.00	1,616.00
54.5	System Installation (Field Installation)	92.00	5,014.00
40.1	Inside Project Work (Drafting)	92.00	3,689.20
8.0	Post-Installation (In-Service Training and Documents)	76.00	608.00
Total KCDA Labor			<u>\$10,927.20</u>
Sub-Total			\$25,682.36
Washington State Sales Tax (8.7%)			<u>2,234.36</u>
Total KCDA Equipment and Labor – Purchased from KCDA			\$27,916.72
<i><b>PO to be issued to KCDA for this amount.</b></i>			

### Non-KCDA Equipment – Purchased from Intuitive Classroom Technology:

<u>Qty.</u>	<u>Model #</u>	<u>Description</u>	<u>Price Each</u>	<u>Extended</u>
(1)	TPE-S44	PoE Switch	113.75	113.75
(3)	-----	Custom Single Speaker Installation Kits	262.50	787.50
(1)	DBT-1713UDP	Universal Blu-Ray DVD/CD Player	742.00	742.00
(1)	MPS 601	Media Presentation Switcher	1,478.75	1,478.75
(1)	HRU 109	1U Universal Half-Rack Shelf Kit, Gray	96.25	96.25
(1)	IN5145	LCD Projector	4,554.01	4,554.01
(1)	PAG-UNV-HD	Universal Heavy-Duty Projector Mounting Kit	251.78	251.78
-----	-----	Miscellaneous Projector Mounting Hardware	262.50	262.50
(1)	8806	VGA Extender	127.75	127.75
(2)	8121	HDMI Extenders	35.00	70.00
(2)	40304	HDMI Cables, Short	22.75	45.50
(2)	SKM100-835	Wireless Hand-Held Transmitters	434.00	868.00
(1)	12124SC	Wall Box	47.73	47.73
(4)	DXF	Dual Output Splitting Transformers	47.90	191.60
(1)	E123-25	Power Cord	59.47	59.47

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Page 3 of 4

### Multipurpose Room A/V System (continued)

Non-KCDA Equipment – Purchased from Intuitive Classroom Technology (continued):

<u>Qty.</u>	<u>Model #</u>	<u>Description</u>	<u>Price Each</u>	<u>Extended</u>
(1)	-----	Custom AV Plate	105.00	105.00
(1)	-----	Custom Rack Panel (RED-1F / MP3/Mic Input)	175.00	175.00
----	-----	Covers for Existing Mic/Aux Plates	87.50	87.50
(2000')	4245	4-Pair Cat5E Cable	141.75	283.50
-----	-----	Lift Rental	350.00	700.00
Sub-Total				\$11,047.59
Washington State Sales Tax (8.7%)				961.14
Total Non-KDCA Equipment				\$12,008.73

*PO to be issued to Intuitive Classroom Technology for this amount.*

The price is for the material, cable, and trim labor to provide a Multipurpose Room A/V System designed by Intuitive Classroom Technology. A new equipment rack will be located in the back right corner of the Multipurpose Room. The operable components, such as the wireless microphone receivers, DVD player, solid-state audio recorder/player, and video switcher, will be located at a usable height. There will be a total of four head-worn wireless microphone systems, and two additional hand-held microphone transmitters. The RED-1F Remote Ethernet Device will be mounted on a custom panel located on the front of the equipment rack.

We have designed this system with two 12" speakers and one 18" subwoofer located at the front of the room facing the seating area.

A custom input plate located in the front of the room below the screen will have HDMI, VGA, microphone, and auxiliary inputs, as well as an infrared receiver for control of the DVD player. There will be a projector located near the ceiling in the center of the room. This projector has been chosen to work with the existing 120" wide screen. A remote control provided with the projector will power it on and off. A duplex outlet at the projector location will be provided and installed by others.

The price also includes the labor for Intuitive Classroom Technology to remove the old speakers and inputs. All cable provided by Intuitive Classroom Technology will be installed by others. Pipe will be provided and installed by others if necessary.

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Page 4 of 4

Multipurpose Room A/V System (continued)

**All equipment and labor designated as KCDA will be purchased from KCDA. All non-KCDA equipment will be purchased from Intuitive Classroom Technology. The price includes KCDA's administrative fee to process the order.**

Washington State required Statement of Intent to Pay Prevailing Wage and Affidavit of Wages Paid fees are not included in this quotation. If the School District requires these forms to be filed, an additional \$80.00 will need to be added to the KCDA purchase order.

If a performance bond is required per RCW 39.08.010, that cost will be an addition to the total amount purchased if it is above \$35,000.00. If the School District requires the performance bond, the cost will be paid directly to Intuitive Classroom Technology.

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By Ben Swerk

Accepted by \_\_\_\_\_

Purchase Order # \_\_\_\_\_

Quotation void if not accepted within 60 days.

Intuitive Classroom Technology will not be responsible for delays due to strikes, accidents, or other causes beyond our control.



### Description:

The LER is an E.I.A. compliant rack (UL Listed Standard 1678) that offers solid structural support to mount and secure electronic equipment. Rack is fully welded 16-gauge steel with 14-ga. steel bottom and reinforced at all load-bearing junctures for strength equivalent to 11-ga. steel. Includes one pair of adjustable mounting rails that can be repositioned along side rail supports. Rails are tapped 10-32 and printed with easy-to-read rack unit increments. Clearance from rails to flush outside of frame is 1.75" [44.45mm]; 2.5" [64mm] from rail to inside of optional surface-mount front door.

### Features:

- Top opening has bolted rails tapped 10-32. Use the two steel panels included as shipping stiffeners for flush closure, or add optional fan panels for active cooling.
- Abundant cable lacing points and wire management space:
  - Top: 7U opening and 6.0" [152mm] deep rear plane with three knockouts for conduit 2.0-1.0" [51-25mm], two knockouts for conduit 1.5-1.0" [38-25mm], plus room to use a Greenlee-style punch for 4.0" [102mm] conduit. Four 0.5" [13mm] knockouts for BNC style wireless antenna.
  - Rear: removable combination knockout panels above and below rear door: 0.5" [13mm] knockouts for wireless antennae and compound knockouts for conduit size 0.75-0.5" [19-13mm] and 1.5"-1.0" [38-25mm].
  - Bottom: 14-gauge steel frame with full-size opening to facilitate floor entry of cable.
- Bottom also has provisions to accept optional leg levelers, anchor bolts (by others), mobile or stationary base.
- Welded side panels with top/bottom vents.
- Recessed rear door with top/bottom vents and keyed lock.
- Open front with top/bottom vents.
- Panel Hardware: PilotPoint™ screws with captive washers.
- Four beveled corners, black wrinkle powder epoxy finish.
- Made in the U.S.A. with 100% certified U.S. steel
- UL rated to support a load up to 3150 lbs. [1429 kg].

### Options: (order separately)

- **Front Door**: locking front door in solid steel, fully-vented steel or steel frame with smoked plexiglass insert (LFD-series).
- **Rack Rails**: additional rack rails can be ordered to add support to rear of rack-mounted equipment (RRD-series).

7U top opening with bolted rails tapped 10-32 can be closed with 2 steel panels mounted to front of rack during shipping.

Standard rack includes recessed rear door with lock. To order without rear door, select model number with 'LRD' suffix.

Optional front door can be ordered separately. Vents above and below opening are provided for passive heat dissipation.



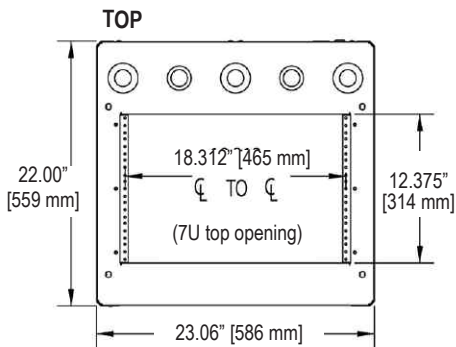
Side panels are vented at top and bottom for passive heat dissipation.

### A & E Specifications:

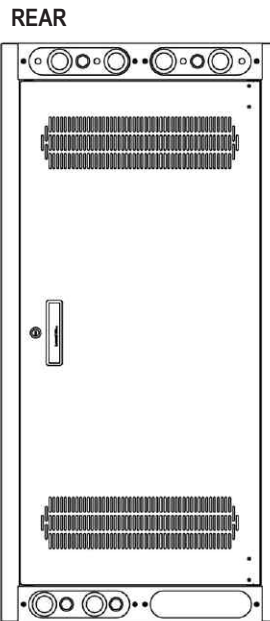
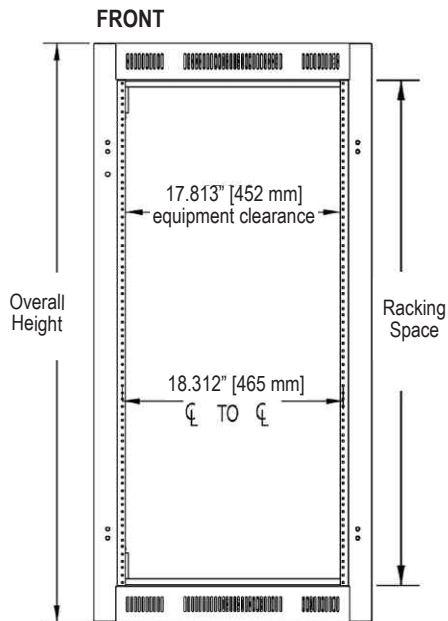
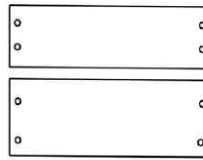
The UL Listed (Standard 1678), E.I.A. compliant equipment rack shall be Lowell Model \_\_\_\_\_. It shall measure 23.06"W x 22"D x \_\_\_\_\_"H [586mmW x 559mmD x \_\_\_\_\_mmH] with racking space of \_\_\_\_\_ rack units. It shall be fully welded 16-ga. certified U.S. steel with seamless side-frame construction and 14-ga. steel bottom reinforced at all load-bearing junctures. It shall include vented side panels, vented recessed rear door with keyed lock, and vents above and below the open front. It shall include one-pair of adjustable mounting rails tapped 10-32. Top shall have 2.0-1.0" [51-25mm] and 1.5-1.0" [38-25mm] compound knockouts for conduit; 0.5" [13 mm] knockouts for BNC wireless antennas; and 7U opening with integral E.I.A. rail to accept optional 19" [483mm] accessories. Two steel closure panels shall be included as shipping stiffeners. Open bottom shall have provisions for optional leg levelers and holes for anchor bolts (by others). Rear shall have removable knockout panels above and below door with 0.5" [13mm] knockouts for wireless antennae and 0.75-0.5" [19-13mm] and 1.5"-1.0" [38-25mm] compound knockouts for conduit. Rack finish shall be black wrinkle powder epoxy.

Model No.	Description	Racking Space	Overall Depth	Usable Depth	Overall Height	Overall Width
LER-1822	Enclosed Rack	31.50 in / 800 mm / 18U	22 in / 559 mm	19.34 in / 419 mm	37.625 in / 956 mm	23.06 in / 586 mm
LER-1822-LRD	Enclosed Rack (less rear door)	31.50 in / 800 mm / 18U	22 in / 559 mm	19.34 in / 419 mm	37.625 in / 956 mm	23.06 in / 586 mm
LER-2122	Enclosed Rack	36.75 in / 933 mm / 21U	22 in / 559 mm	19.34 in / 419 mm	42.875 in / 1089 mm	23.06 in / 586 mm
LER-2122-LRD	Enclosed Rack (less rear door)	36.75 in / 933 mm / 21U	22 in / 559 mm	19.34 in / 419 mm	42.875 in / 1089 mm	23.06 in / 586 mm
LER-2422	Enclosed Rack	42.00 in / 1067 mm / 24U	22 in / 559 mm	19.34 in / 419 mm	48.125 in / 1222 mm	23.06 in / 586 mm
LER-2422-LRD	Enclosed Rack (less rear door)	42.00 in / 1067 mm / 24U	22 in / 559 mm	19.34 in / 419 mm	48.125 in / 1222 mm	23.06 in / 586 mm
LER-3522	Enclosed Rack	61.25 in / 1556 mm / 35U	22 in / 559 mm	19.34 in / 419 mm	67.375 in / 1711 mm	23.06 in / 586 mm
LER-3522-LRD	Enclosed Rack (less rear door)	61.25 in / 1556 mm / 35U	22 in / 559 mm	19.34 in / 419 mm	67.375 in / 1711 mm	23.06 in / 586 mm
LER-4022	Enclosed Rack	70.00 in / 1778 mm / 40U	22 in / 559 mm	19.34 in / 419 mm	76.125 in / 1934 mm	23.06 in / 586 mm
LER-4022-LRD	Enclosed Rack (less rear door)	70.00 in / 1778 mm / 40U	22 in / 559 mm	19.34 in / 419 mm	76.125 in / 1934 mm	23.06 in / 586 mm
LER-4422	Enclosed Rack	77.00 in / 1956 mm / 44U	22 in / 559 mm	19.34 in / 419 mm	83.125 in / 2111 mm	23.06 in / 586 mm
LER-4422-LRD	Enclosed Rack (less rear door)	77.00 in / 1956 mm / 44U	22 in / 559 mm	19.34 in / 419 mm	83.125 in / 2111 mm	23.06 in / 586 mm

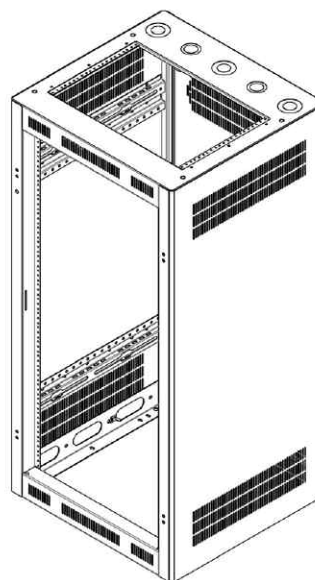
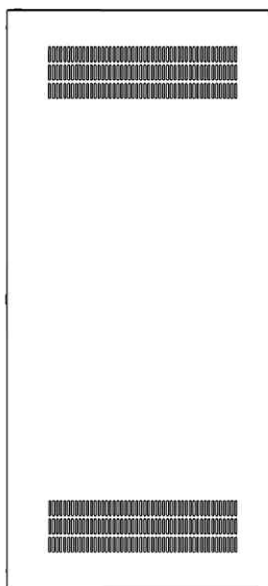
One rack unit (RU or U) = 1.75 inches or 44.45 mm. Usable depth is maximum racking depth with front rack rails in fully forward position. Some measurements have been rounded.



Two steel shipping stiffeners with black epoxy finish double as closure panels for 7U opening in top of rack.



## SIDE



## TOP

Combination knockouts for conduit – three 2.0"-1.0" [51-25mm] and two 1.5"-1.0" [38-25mm]. Four 0.5" [13mm] front-to-rear knockouts for BNC. Extra deep 6.0" [152mm] plane provides room to use a Greenlee-style punch for 4.0" [102mm] conduit. Top opening has bolted rails tapped 10-32. Two solid panels (3U and 4U) mounted to rack front for extra stability during shipping can be used as flush closure for 7U opening. Opening accepts optional fan or vent panels.

## FRONT

Vents situated above and below main opening for passive heat dissipation (front door is available as an option). Front mounting rails are fully adjustable and can be set anywhere along the front-to-back rail supports.

## REAR (includes recessed door)

Rear door has top/bottom vents that include notches to mount an optional rear door fan panel or single fan kit. Recessed handle with keyed lock. Combination knockout panels above and below rear door include 0.5" [13mm] for wireless antenna, 0.75"-0.5" [19-13mm] and 1.5"-1.0" [38-25mm] for conduit. One blank project panel at bottom.

*Note: A fully-vented rear door is available as an option. To order, first select a rack model with the 'LRD' suffix (less rear door), then order a fully-vented rear door separately (see LRD door series in Rack Accessories).*

## SIDES

Welded steel side panels have vents at top and bottom for passive heat dissipation.

### Description:

LFD front doors (solid steel, fully-vented or smoked plexiglass) with recessed handles are engineered to work with Lowell 19" [483mm] wide equipment racks in series listed. The surface-mount doors feature 180° swing and can be changed from right to left orientation by moving two hinges (factory-installed hinge nutserts on matching Lowell racks facilitate quick changeover). Door extends 1" [25mm] from the rack frame on the outside, providing .75" [19mm] of space from frame on the inside to accommodate equipment knobs. See individual rack specs for more information.

### Features:

- Surface-mount door (20"W x 1"D) is made in USA with left or right swing (field changeable); swings open 180°
- Two hinges install with 10-32 x 1" socket-head machine screws. Black plugs cover screws for a finished appearance.
- For rack series LBR, LDRF, LER, LGR, LPR, LPPR, LSER, LSGR, LWBR, LWR, LWSR

### A&E Specifications:

The surface-mount front door with keyed lock shall be Lowell Model No. \_\_\_\_\_ and shall be (solid steel, fully-vented steel, or steel with smoked plexiglass insert). It shall extend 1" [25mm] from rack frame and swing open 180°.

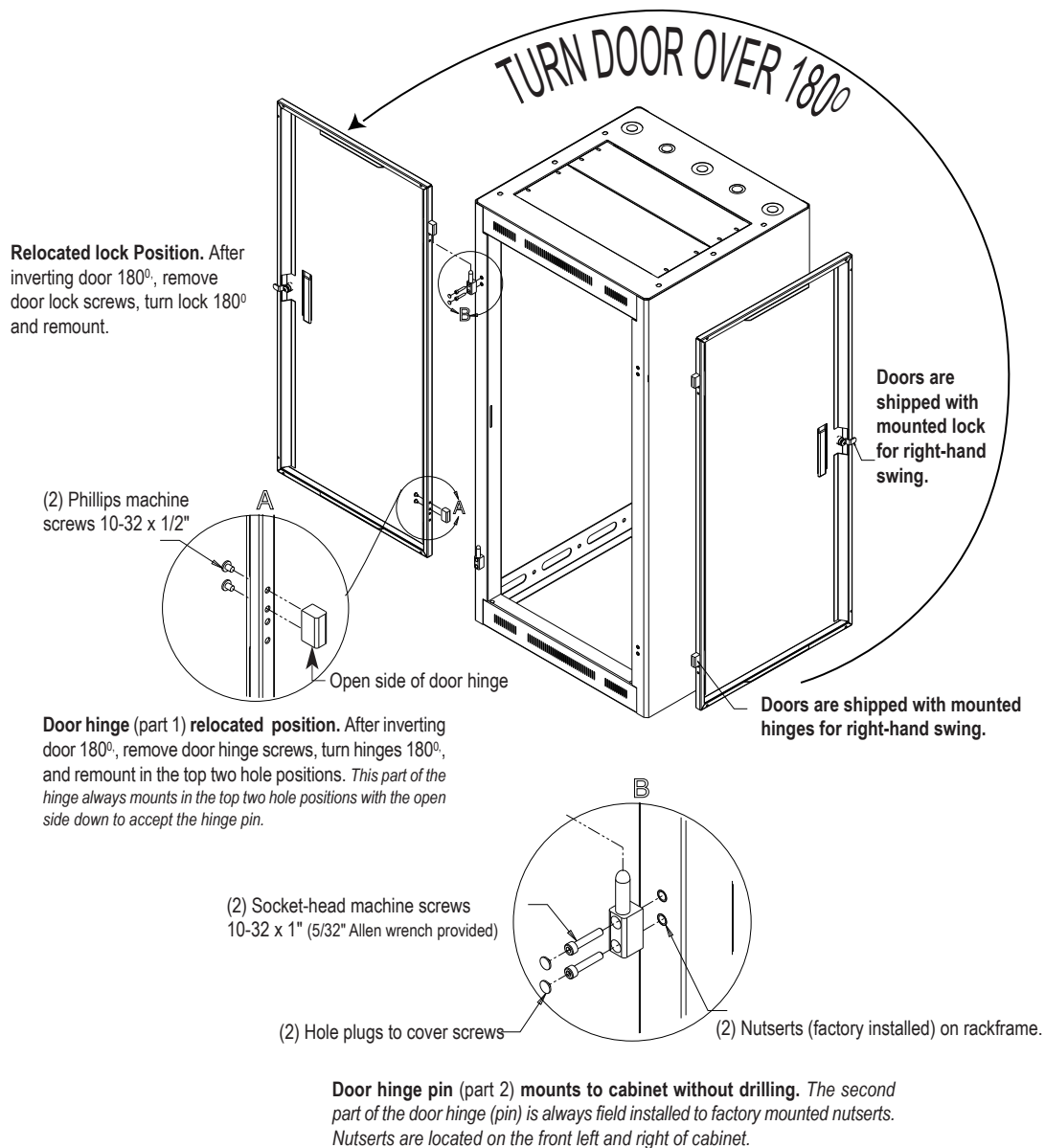


Front doors in solid, fully-vented and smoked plexiglass.

Model No.	Description
LFD-7	7U solid door with lock
LFD-7FV	7U full-vent door with lock
LFD-7P	7U plexiglass door with lock
LFD-10	10U solid door with lock
LFD-10FV	10U full-vent door with lock
LFD-10P	10U plexiglass door with lock
LFD-12	12U solid door with lock
LFD-12FV	12U full-vent door with lock
LFD-12P	12U plexiglass door with lock
LFD-14	14U solid door with lock
LFD-14FV	14U full-vent door with lock
LFD-14P	14U plexiglass door with lock
LFD-16	16U solid door with lock
LFD-16FV	16U full-vent door with lock
LFD-16P	16U plexiglass door with lock
LFD-18	18U solid door with lock
LFD-18FV	18U full-vent door with lock
LFD-18P	18U plexiglass door with lock
LFD-21	21U solid door with lock
LFD-21FV	21U full-vent door with lock
LFD-21P	21U plexiglass door with lock
LFD-24	24U solid door with lock
LFD-24FV	24U full-vent door with lock
LFD-24P	24U plexiglass door with lock
LFD-35	35U solid door with lock
LFD-35FV	35U full-vent door with lock
LFD-35P	35U plexiglass door with lock
LFD-40	40U solid door with lock
LFD-40FV	40U full-vent door with lock
LFD-40P	40U plexiglass door with lock
LFD-44	44U solid door with lock
LFD-44FV	44U full-vent door with lock
LFD-44P	44U plexiglass door with lock
LK-FD	(2) extra keys for front door lock

One rack unit (RU or U) = 1.75 inches or 44.45 mm. Some measurements have been rounded.

**Changing from right to left swing:** Doors mount right or left (with hinges relocated) to premounted nutserts on each side of the rack frame. This method eliminates drilling and allows doors to be installed after equipment is loaded.



# PS-8R II

POWER CONDITIONER/SEQUENCER WITH **SMP+** TECHNOLOGY**FURMAN**

UNPARALLELED POWER PURIFICATION AND PROTECTION

## FEATURES

**SMP**  
SERIES MULTI-STAGE  
PROTECTION
**LiFT**  
LINEAR FILTERING  
TECHNOLOGY
**E.V.S.**  
EXTREME  
VOLTAGE SHUTDOWN

- Series Multi-Stage Protection Plus (**SMP+**) for virtually maintenance free protection from surges and spikes. No sacrificed parts, no service calls, no downtime!
- Furman's unequaled Linear Filtering Technology (**LiFT**) rids systems of AC line noise for consistent audio/video clarity
- Automatic Extreme Voltage Shutdown (**E.V.S.**) powers down equipment during a prolonged or extreme over-voltage
- Six sequenced rear panel outlets (in 3 groups), two switched rear panel outlets, and one front panel unswitched outlet
- Momentary and Maintained sequencing via rear panel terminal block or front panel switch
- BNC connector on the rear panel allows attachment of any standard 12V gooseneck lamp to illuminate the rear of your rack
- 15 amp rating
- 3 year limited warranty

## DESCRIPTION

The most widely recognized and trusted name in AC power conditioning is proud to introduce the PS-8R II power conditioner / sequencer, featuring Furman's revolutionary **SMP+** technology. Furman's Series Multi-Stage Protection Plus (**SMP+**) circuit features our exclusive Linear Filtering Technology (**LiFT**) and Extreme Voltage Shutdown (**E.V.S.**). Together, these technologies comprise what is, without question, the world's most advanced and comprehensive transient voltage surge suppressor.

Additionally, the PS-8R II Power Conditioner/Sequencer is capable of powering up a rack full of equipment in a 3-step delayed sequence. The sequence is reversed for power-down. The sequence can be initiated with either momentary or maintained switches, locally or remotely. A duplex outlet is provided for each delay step. A front panel screwdriver adjustment sets the delay time for the PS-8R II. The PS-8R II also features a locking

switch with a removable key for maximum security. One or more Furman PS-8R II's may be installed in remote locations and operated via low-voltage wiring. The PS-8R II includes a rear mounted BNC jack which accepts any standard (12VAC, 0.5A) gooseneck lamp for rear rack illumination, as well as a front panel switch which controls the gooseneck's operation.

### PS-REL Relay Accessory

Allows a PS-8R II to be turned on by sensing AC at a preamp's switched outlet; also allows daisy-chaining for 6 or more delayed outlet groups.

### Export Models

Models PS-8R E II: "E" suffix versions are for use in countries with 220/240 volt AC lines. Furman Power Sequencers use internationally accepted IEC-320 connectors.

(Continued on reverse)



**Series Multi-Stage Protection Plus (SMP+)**

**SMP+** is Furman's proprietary surge suppression and noise filtration system. Designed over a period of two years by our California based engineering team, **SMP+** is composed of three separate and distinct technologies which work together in a precisely tuned circuit to filter or "clean" the incoming power and to protect connected equipment from potentially damaging AC events. These technologies are Linear Filtering, Series Multi-Stage Protection, and Extreme Voltage Shutdown.

**Linear Filtering Technology (LiFT):**

Unfortunately, traditional AC filter conditioners have been designed for unrealistic laboratory conditions. Prior technologies could actually harm audio and video performance more than they help, due to the resonant peaking of their antiquated, non-linear designs. Under certain conditions, these designs can actually add more than 10 dB of noise to the incoming AC line! Worse still, lost digital data, the need to re-boot digital pre-sets, or destroyed digital converters are frequently caused by excessive voltage spikes and AC noise contaminating the equipment ground. Furman's **LiFT** takes another approach, ensuring optimal performance through linear filtering and no leakage to ground.

**Series Multi-Stage Protection (SMP):**

Traditional surge suppression relies on circuits that "sacrifice" themselves when exposed to multiple transient voltage spikes, requiring the dismantling of your system and repair of your surge suppressor. With Furman's **SMP+**, however, damaging transient voltages are safely absorbed, clamped and dissipated. No sacrificed parts, no service calls, no downtime. Also unique to Furman's **SMP+** is its unparalleled clamping voltage. While other designs offer clamping voltages that are well above 300Vpk, Furman's **SMP+** clamps at 188Vpk, 133 VAC RMS, even when tested with multiple 6000Vpk - 3000 amp surges! This unprecedented level of protection is only available with Furman's **SMP+** technology.

**Extreme Voltage Shutdown (E.V.S.):**

When voltage rises to extreme levels because of a lost neutral line or an accidental connection to 208 or 240 VAC, Furman's Extreme Voltage Shutdown kicks in, automatically powering down all equipment quickly and safely in order to prevent damage from occurring. An indicator LED will then illuminate, alerting you to the situation until the over voltage condition is corrected.

**PS-8R II SPECIFICATIONS****Current Rating**

15 amps ("E" version 10 amps)

**Operating Voltage**

90 to 140 VAC ("E" version 180 to 280 VAC)

**Over Voltage Shutdown**

140 VAC typically ("E" version 280 VAC typically)

**Spike Protection Modes**

Line to neutral, zero ground leakage

**Spike Clamping Voltage**

188 Vpk @ 3,000 amps, 133 VAC RMS  
(tested to UL-1449 6,000 Vpk @ 3,000 amps)

**Response Time**

1 nanosecond

**Maximum Surge Current**

6,500 amps

**Noise Attenuation**

10 dB @ 10 kHz

40 dB @ 100 kHz

100 dB @ 10 MHz

Linear attenuation curve from 0.05 - 100 ohms line impedance

**Dimensions**

19" W x 10.5" D x 1.75" H

**Weight**

11 lbs (5 kg)

**Power Consumption**

6 watts

**Safety Agency Listings**

CE, NRTL-C

**Patent Number**

CA1332074 (4,901,183)

**Three Year Limited Warranty**

The PS-8R II is protected by a limited three year warranty covering defects in materials and workmanship.

## 15A AC Power Strip with Attached (Fixed) Cord

### Description:

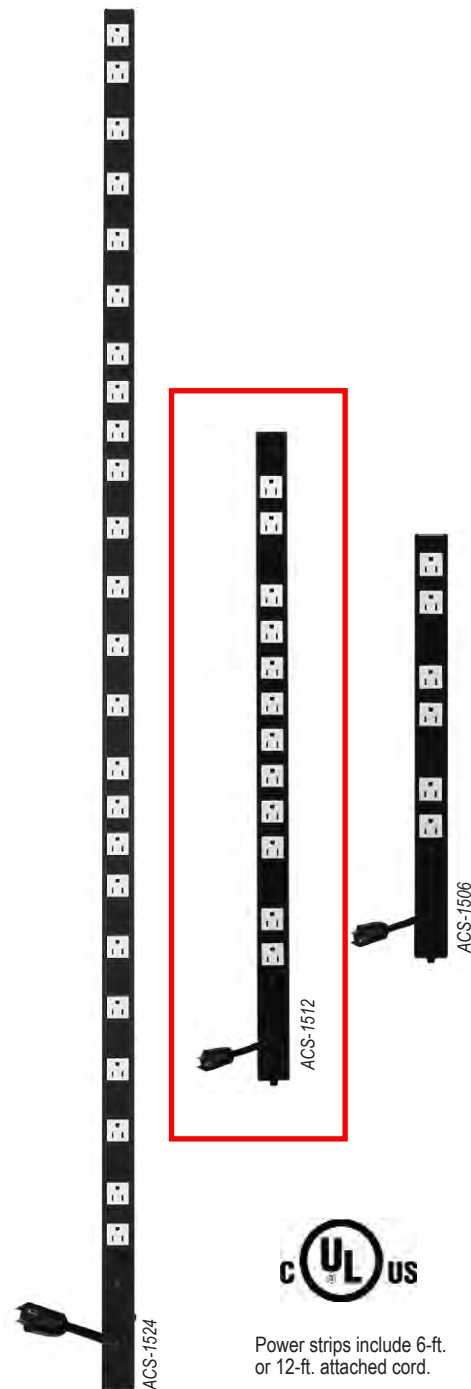
These 15A AC power strips provide convenient access to power in racks and cabinets. The UL Listed devices feature single outlets spaced to accept some large power supplies (wall warts) and terminate to an attached cord with NEMA 5-15P molded plug. Includes common mode transient voltage surge suppression (UL 1449-3 Listed) with an LED indicator and a 15A circuit breaker. Installs to rack with mounting clip and screw. Black chassis. Imported.

### Features:

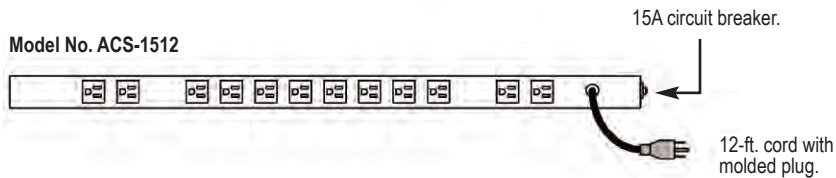
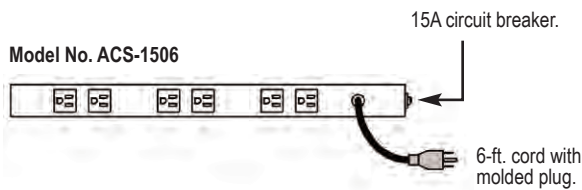
- Light colored single outlets provide high visibility inside dark cabinets and are spaced to allow room for some large "wall-wart" power supplies.
- Attached cord (6-ft. or 12-ft., depending on model) with NEMA 5-15P molded plug.
- Common mode transient voltage surge suppression (UL 1449-3 Listed) with LED indicator and 15A circuit breaker:
  - Suppressed voltage rating: 400V
  - Energy dissipation: 450 Joules (8 x 20us waveform)
  - Lines protected: L-G, L-N, N-G
  - Maximum surge voltage: 6000V
  - Maximum peak current: 6500 Amperes (L-G, L-N, N-G)
  - Response time: less than one (1) nanosecond
  - Noise filtering: EMI / RFI
  - LED is on when protection is active
- Bag of cable ties (to secure power supplies) and mounting clip/screw
- Model ACS-1506: features 6 (15A) single outlets on 20"L chassis with 6-ft. fixed cord.
- Model ACS-1512: features 12 (15A) single outlets on 32"L chassis with 12-ft. fixed cord.
- Model ACS-1524: features 24 (15A) single outlets on 60"L chassis with 12-ft. fixed cord.

### A & E Specifications:

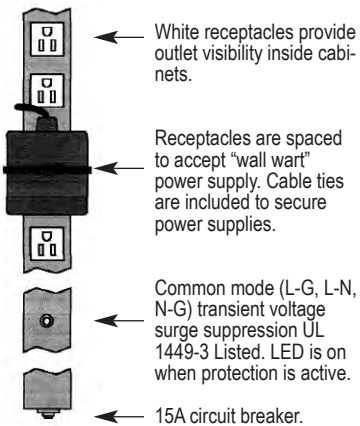
The UL Listed power strip shall be Lowell Model \_\_\_\_\_. Power rating shall be 120VAC 15A with circuit breaker protection and an LED indicator that is lit when protection is active. The power strip shall have a suppressed voltage rating of 400V with maximum surge at 6000V and 6500 Amperes maximum peak current. Power strip shall include \_\_\_\_\_ outlets spaced to accept power supplies. It shall be terminated with a \_\_\_\_\_ foot cord and molded plug. It shall install to adjustable or fixed rail racks with a mounting clip and screw.



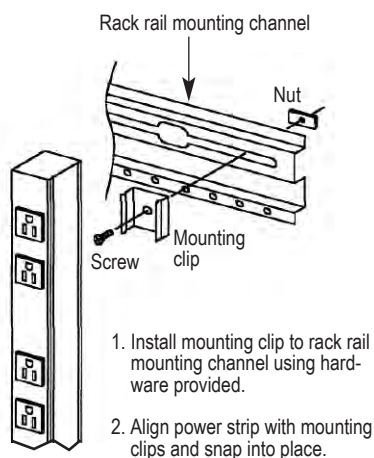
Model No.	Description	Power	Outlets	NRTL	Surge Suppression	Chassis Size
ACS-1506	AC Power Strip with fixed (attached) cord	120VAC 15A	6 single	UL	Yes	20" x 1.625" x 1.375"
ACS-1512	AC Power Strip with fixed (attached) cord	120VAC 15A	12 single	UL	Yes	32" x 1.625" x 1.375"
ACS-1524	AC Power Strip with fixed (attached) cord	120VAC 15A	24 single	UL	Yes	60" x 1.625" x 1.375"



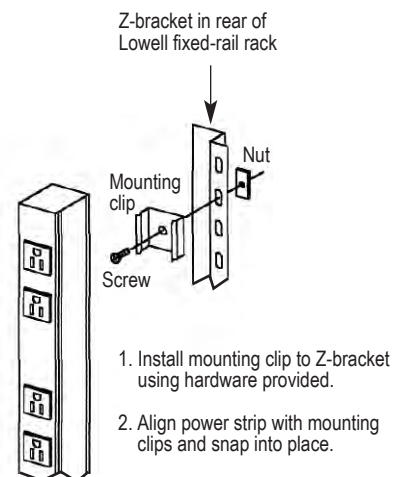
## Features



## Installation: adjustable mounting rails



## Installation: fixed mounting rails





### Description: Aluminum Flat Panel

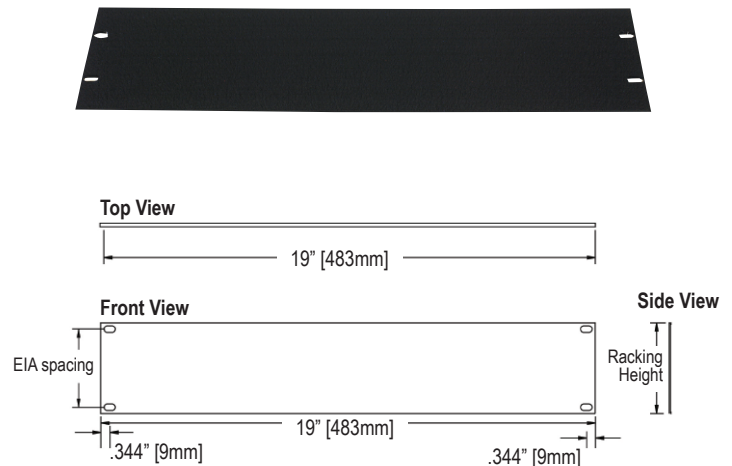
Blank panel for a 19" [483mm] EIA rack is 1/8" [3mm] flat aluminum with a black wrinkle powder epoxy finish. It's ideal for applications where the light weight and environmental attributes of aluminum are specified but the strength of a flanged panel is not needed. Panel is available in a variety of heights, as a single unit or multi-pack contractor carton.

### Features:

- Material: 1/8" [3mm] aluminum
- Style: flat (no flange)
- Finish: black wrinkle powder epoxy
- Made in the USA
- EIA compliant

### A & E Specifications:

The blank rackmount panel shall be Lowell Model No. \_\_\_\_\_. It shall be 1/8" [3mm] aluminum with a black wrinkle powder epoxy finish. The panel shall measure 19 in. [483mm] wide x \_\_\_\_\_U.

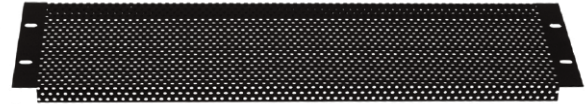


Model. No.	Description	Former No.	Racking Height	Carton Pack
AFP-1	Aluminum Flat Panel	L1-191	1.75 in / 45 mm / 1U	1
AFP-1CC	Aluminum Flat Panel, Contractor Carton	L1-191CC	1.75 in / 45 mm / 1U	12
AFP-2	Aluminum Flat Panel	L1-193	3.50 in / 89 mm / 2U	1
AFP-2CC	Aluminum Flat Panel, Contractor Carton	L1-193CC	3.50 in / 89 mm / 2U	12
AFP-3	Aluminum Flat Panel	L1-195	5.25 in / 133 mm / 3U	1
AFP-3CC	Aluminum Flat Panel, Contractor Carton	L1-195CC	5.25 in / 133 mm / 3U	6
AFP-4	Aluminum Flat Panel	L1-197	7.00 in / 178 mm / 4U	1
AFP-4CC	Aluminum Flat Panel, Contractor Carton	L1-197CC	7.00 in / 178 mm / 4U	6
AFP-5	Aluminum Flat Panel	L1-198	8.75 in / 222 mm / 5U	1
AFP-6	Aluminum Flat Panel	L1-1910	10.50 in / 267 mm / 6U	1

One rack unit (RU or U) = 1.75 inches or 44.45 mm.  
Some measurements have been rounded.

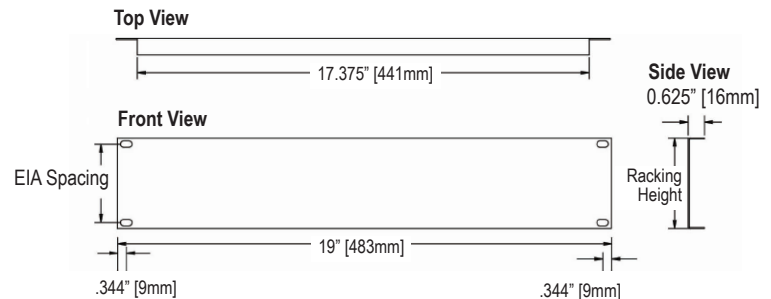
### Description: Steel Vent Panel

Blank panel for 19 in. [483] EIA rack is perforated 18-gauge steel with 0.625 in. [16mm] flange for strength and rigidity. Panel has finely perforated .0781 inch [2mm] diameter holes on .125 inch [3mm] staggered centers (35% open area). They're ideal for allowing passive heat ventilation for mounted equipment. Available in single units and bulk-pack cartons.



### Features:

- Material: 18-gauge US steel
- Style: 0.625 in. [16mm] flange
- Finish: smooth black semi-gloss powder epoxy
- Made in the USA
- EIA compliant



### A & E Specifications:

The blank rackmount panel shall be Lowell Model No. \_\_\_\_\_. It shall be made of 18-gauge steel with a smooth black semi-gloss powder epoxy finish. The panel shall measure 19 in. [483mm] wide x \_\_\_\_\_U racking height and have a 0.625 in. [16mm] flange.

Model. No.	Description	Former No.	Racking Height	Carton Pack
SVP-1	Steel Vent Panel with flange	L5-191	1.75 in / 45 mm / 1U	1
SVP-1CC	Steel Vent Panel with flange, contractor carton	L5-191CC	1.75 in / 45 mm / 1U	12
SVP-2	Steel Vent Panel with flange	L5-193	3.50 in / 89 mm / 2U	1
SVP-2CC	Steel Vent Panel with flange, contractor carton	L5-193CC	3.50 in / 89 mm / 2U	12
SVP-3	Steel Vent Panel with flange	L5-195	5.25 in / 133 mm / 3U	1
SVP-3CC	Steel Vent Panel with flange, contractor carton	L5-195CC	5.25 in / 133 mm / 3U	6
SVP-4	Steel Vent Panel with flange	L5-197	7.00 in / 178 mm / 4U	1
SVP-4CC	Steel Vent Panel with flange, contractor carton	L5-197CC	7.00 in / 178 mm / 4U	6

One rack unit (RU or U) = 1.75 inches or 44.45 mm.  
Some measurements have been rounded.

### Description:

The UDE Series utility drawer features fully welded construction of 16-gauge steel. The drawer mounts to front rack rails using standard EIA spacing and features ball-bearing slides for smooth operation. Non-locking.



### Features:

- Fully-welded 16-gauge US steel.
- Ball-bearing slides
- Mounts on front rails of 19"W [483mm] EIA rack.
- Load capacity 50 lbs. [22.6 kg]
- Smooth black powder epoxy finish.
- Made in the USA
- Plastic bushing in rear of drawer for plug or wire pass-through up to 1.06" dia. [27mm]



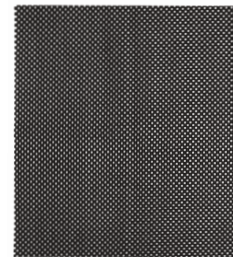
UDE Series  
rackmount utility drawer.

### Optional:

- **DFI Series Foam Insert:** Die-cut foam is pre-scored to "pick and pull out" small sections, creating custom holes that keep accessories from jostling around when drawer is opened and closed. Foam insert includes two pieces — die-cut top section plus 3/8" [10mm] foam base. 15.5" x 14" [394mm x 356mm]. Fits UDE and UDEL drawers.
  - **DFI-2:** for 2U drawer
  - **DFI-3:** for 3U drawer
  - **DFI-4:** for 4U drawer
- **CDM Mat:** Non-slip perforated liner provides a protective barrier between electronic accessories and drawer's metal surface. 15.5" x 14" [394mm x 356mm].



To protect sensitive electronics stored in rack drawers you can create a custom-fit to cushion them with the optional DFI foam insert.



Optional CDM non-slip  
drawer mat.

### A & E Specifications:

The rackmount utility drawer shall be Lowell Model No. \_\_\_\_\_. It shall have panel space height of \_\_\_\_\_ and shall be fully-welded, 16-gauge steel with a black powder epoxy finish. The drawer shall feature ball-bearing slides and have a load capacity of 50 lbs. [22.6 kg].

[The drawer shall include liner Model No. \_\_\_\_\_ to protect equipment.]

Model No.	Description	Rack Units	Overall Depth	Overall Width	Load Capacity
UDE-214	Utility Drawer, Economy	2	14.5 in / 368 mm	19 in / 483 mm	50 lbs / 22.6 kg
UDE-314	Utility Drawer, Economy	3	14.5 in / 368 mm	19 in / 483 mm	50 lbs / 22.6 kg
UDE-414	Utility Drawer, Economy	4	14.5 in / 368 mm	19 in / 483 mm	50 lbs / 22.6 kg
DFI-2	Drawer Foam Insert (for 2U drawer)				
DFI-3	Drawer Foam Insert (for 3U drawer)				
DFI-4	Drawer Foam Insert (for 4U drawer)				
CDM	Cabinet Drawer Mat				

One rack unit (RU or U) = 1.75 inches or 44.45 mm. Some measurements have been rounded.

16.86" [428mm]

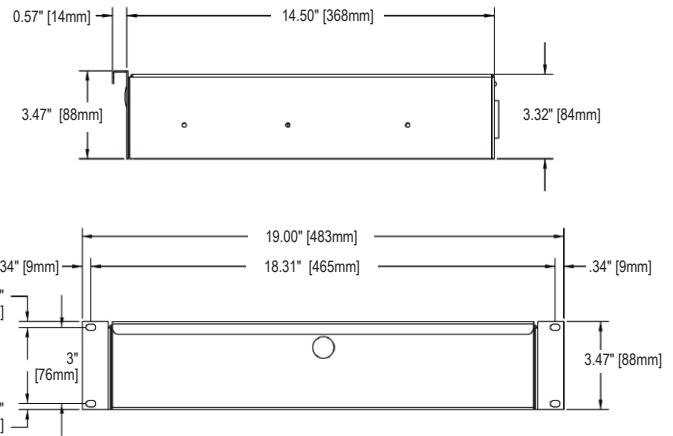
14.50" [368mm]

.57"

19.00" [483mm]

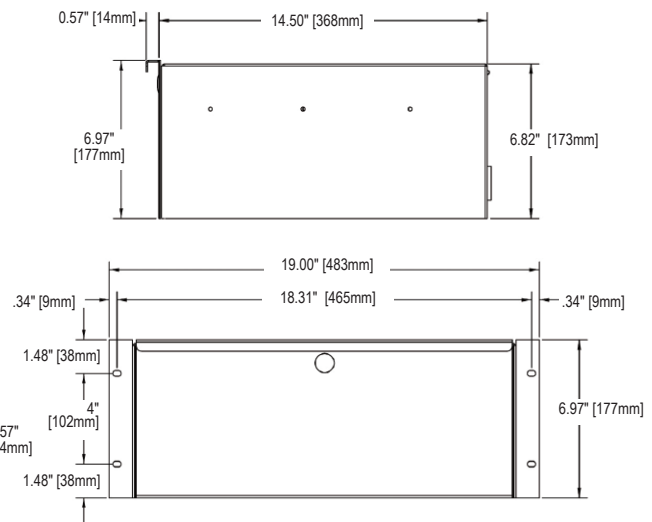
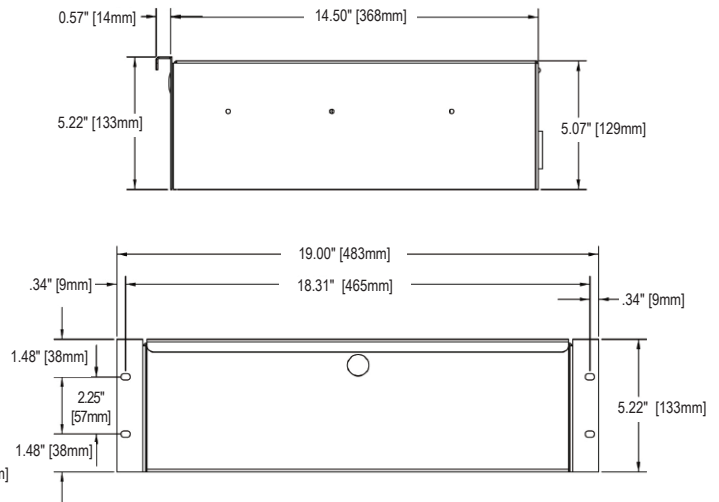
.23" [6mm]

.23" [6mm]



Technical drawing of the front view of the monitor. The drawing shows a rectangular frame with a central display area. Dimensions are indicated with arrows and text:

- Top width: 16.86" [428mm]
- Right height: 14.50" [368mm]
- Bottom width: 19.00" [483mm]
- Bottom height: 0.57" [14mm]





**Nexia CS is a digital signal processor with 10 mic/line inputs and 6 mic/line outputs. Intended for a variety of conferencing applications such as boardrooms, courtrooms, and council chambers, Nexia CS includes a broad selection of audio components, routing options, and signal processing. The internal system design is completely user definable via PC software, and can be controlled via *daVinci*™ software screens, RS-232 control systems, and/or a variety of optional remote control devices. Multi-unit Nexia systems can be created utilizing Ethernet and NexLink digital audio linking.**

### FEATURES

- 10 balanced mic/line inputs on plug-in barrier strip
- 6 balanced mic/line outputs on plug-in barrier strip
- Ethernet port for software configuration/control
- serial port for third-party RS-232 remote control
- remote control bus for dedicated control panels
- NexLink ports for multi-unit system designs
- Nexia software for Windows® XP Professional/Vista
- pre-configured I/O with definable processing
- mix, route, combine, EQ, delay, control, etc.
- **RoHS** compliance and **AES** grounding practices
- **CE** marked and **UL** listed
- covered by Biamp Systems' five-year warranty
- Ability to select, view, and calibrate:
  - Mixers: standard, automatic, matrix, combiners
  - Equalizers: graphic, parametric, feedback
  - Filters: HPF, LPF, high shelf, low shelf, all-pass
  - Crossovers: 2-Way, 3-Way and 4-way
  - Dynamics: leveler, comp/limiter, ducker, ANC
  - Routers: 2x1 ~ 32x32
  - Delays: 0 ~ 2000 ms
  - Controls: levels, presets, logic, RS-232, etc.
  - Meters: signal present, peak, RMS
  - Generators: tone, pink-noise, white-noise
  - Diagnostics: transfer function

### ARCHITECTS & ENGINEERS SPECIFICATION

The DSP conference system shall provide ten balanced mic/line inputs and six balanced mic/line outputs on plug-in barrier-strip connectors. Inputs and outputs shall be analog, with internal 24-bit A/D & D/A converters operating at a sample rate of 48kHz. All internal processing shall be digital (DSP). NexLink connections shall allow sharing of digital audio within multi-unit systems.

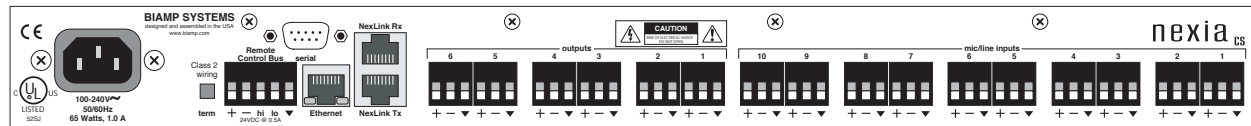
Software shall be provided for creating/connecting DSP system components within each hardware unit. Available system components shall include (but not be limited to) various forms of: mixers, equalizers, filters, crossovers, dynamics/gain controls, routers, delays, remote controls, meters, generators, and diagnostics. Ethernet communications shall be utilized for software control and configuration. After initial programming, processors may be controlled via dedicated software screens, third-party RS-232 control systems, and/or optional remote control devices. Software shall operate on a PC computer, with network card installed, running Windows® XP Professional/Vista. The DSP conference system shall be CE marked, UL listed, and shall incorporate AES48-2005 Grounding & EMC practices. The DSP conference system shall be compliant with EU Directive 2002/95/EC, the RoHS directive. Warranty shall be 5 years.

The DSP conference system shall be Nexia® CS.

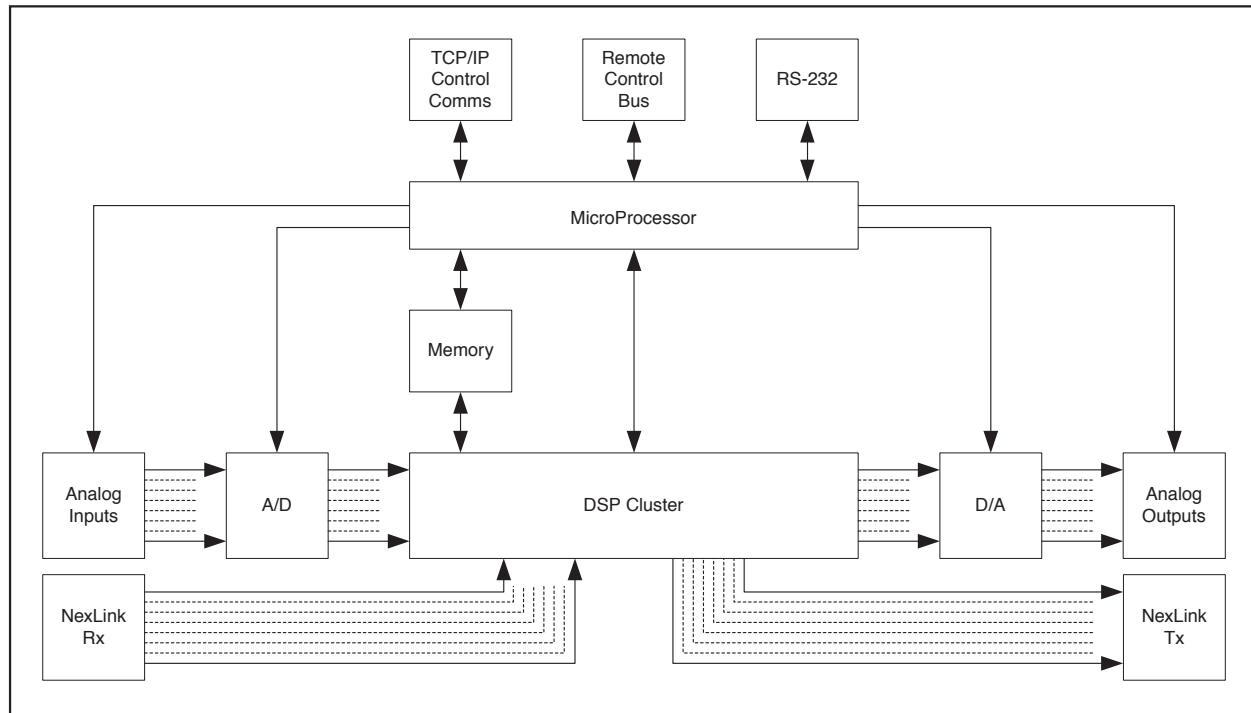
## Nexia® CS SPECIFICATIONS

Frequency Response (20Hz~20kHz @ +4dBu):	+0/-0.4dB	Maximum Output (balanced):	+24dBu
THD + N (20Hz~20kHz @ +4dBu):		Full Scale Output Level (six selections):	-31dBu ~ +24dBu
line level	< 0.006%	Sampling Rate:	48kHz
mic level	< 0.05%	A/D - D/A Converters:	24-bit
Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm):	125dBu	Phantom Power:	+48 VDC (7mA/input)
Dynamic Range (20Hz~20kHz, 0dB):	> 105dB	Power Consumption (100~240VAC 50/60Hz):	65 watts
Maximum Gain (mic input to line output):	66dB	Dimensions:	
Crosstalk (channel-to-channel @ 1kHz):		height	1.75 inches (45mm)
line level input	< -80dB	width	19 inches (483mm)
mic level input	< -75dB	depth	11.15 inches (283mm)
Input Impedance (mic/line balanced):	8k ohms	Weight:	8.6 lbs. (3.9kg)
Maximum Input (mic/line balanced):	+24dBu	Compliance:	AES48-2005 Grounding & EMC practices EU Directive 2002/95/EC, RoHS directive CE marked UL listed
Input Gain Range (variable):	0dB ~ +66dB		
Output Impedance (balanced):	200 ohms		

## Nexia CS REAR PANEL DIAGRAM



## Nexia BLOCK DIAGRAM



## CONTROL Remote Ethernet Device Flush Mount (RED-1F)



**RED-1F Remote Ethernet Device is a flush-mount remote control for Audia® and Nexia® systems. It offers a simple, intuitive interface for end users and can be installed and configured to fit the unique needs of a particular application. The device connects via standard CAT-5/6/7 cabling and is powered over Ethernet, eliminating the need for custom cabling and local power sources. Multiple remote control panels can be connected over large distances using standard network technology.**

### FEATURES

- Adjustment and/or initiation of 32 selectable system volumes and actions
- Volumes are any individual or grouped system levels, including inputs, outputs, matrix cross-points, etc.
- Actions are any individual or grouped system operations, including presets, source selection, mutes, ducking, combining, etc.
- Control functions are programmed in the Audia and Nexia system design software
- High contrast OLED display with a wide viewing angle
- The display brightness can be adjusted to fit the ambient light present in the application and automatically dims when not in use
- Capacitive touch technology eliminates protruding and moving parts to increase product reliability and longevity while simplifying cleaning
- Flush-mounts to any wall; mounts using the retrofit plate (included) or installs in a Raco® 254 box for North American installations (not-included)
- 330' (100m) Ethernet cable length can be extended with standard PoE network technology (routers, switches, hubs, media converters)
- Connects with standard RJ-45 or IDC connector
- Covered by Biamp Systems' five-year warranty

### ARCHITECTS & ENGINEERS SPECIFICATION

The control panel shall provide programmable remote control of volume and selection functions for Biamp's Audia® and Nexia® products. The control shall be a PoE network appliance with a graphical display and a capacitive touch scroll wheel for menu navigation and selection. The connector shall be made using a standard RJ-45 or IDC connector. The control shall be a flush-mounted device. The control shall be made from white PC/ABS material with UV protection additive. The control panel shall carry a five-year warranty. The control panel shall be a Biamp Remote Ethernet Device Flush Mount.

## APPLICATIONS

Source selection	Selection and level control of input sources for background music, such as CD player and auxiliary devices
Paging/music	Zone page routing and music source selection with page-over-music ducking and independent page/music volume control
Restaurant/bar	Music source selection and room volume control, independent per zone, with centralized hostess page routing and volume control
A/V conferencing	Individual source volume control and selection of room mode presets (i.e., conferencing or video playback)
Room combining	Remote selection of room combinations, based on preset configurations or moveable partitions, with automatic combining of volume functions

## SPECIFICATIONS

Dimensions	6.22"H x 5.82"W x 0.5"D (158mm x 148mm x 12.7mm)
Power consumption	PoE Class 1 (3.2W @ full display utilization)
Control cable requirements	CAT-5/6/7 Ethernet cable using either RJ-45 or IDC connector
Control cable length	330' (100m) Ethernet cable length can be extended with standard PoE network technology
Control wiring topology	Standard Ethernet network wiring
Control programming	Each control configured for specific operation by the system design software
Compliance	EU RoHS Directive 2002/95/EC; CE; FCC

## SIDE VIEW (from wall to surface of RED-1F)





## 1RU Solid State / USB Audio Recorder

# DN-F650R

**100<sup>th</sup>**  
*Anniversary*  
**DENON**  
since 1910

Denon Professional, a name synonymous in broadcast, is proud to introduce its next generation solid state audio recorder.

Housed in a compact 1U-rackspace enclosure, the DN-F650R offers contractors and system integrators a versatile solid-state audio recorder / player at an extremely cost-effective price point. The DN-F650R has RS-232c and USB keyboard control, making it perfect for integrated sound systems. Additionally, a full host of inputs and outputs from AES/EBU to Balanced XLR in and out allow for its inclusion into nearly every application. Its playback features also include +20% / -40% pitch control, likewise ideal for dance and aerobics/fitness. Additionally, the optional RC-F400 Remote Controller features a large LCD display and enhances the DN-F650's capability by providing an ergonomically designed, intuitive control unit for instant playback of audio or audio elements (sound effects) via its hot-buttons, making it ideal for live events, radio, television, etc.



### Key Features

- 1 RU Rackmount size for easy installation
- Records and plays back from stable, industry-standard SD/SDHC flash media and USB drives (Thumb / HDD)
- Records WAV (.wav) at 44.1 / 48 / 96 kHz
- Records MP3 (.mp3) at 32-320 kbps
- Balanced (XLR) and unbalanced (RCA) analog inputs and outputs
- S/PDIF and AES/EBU digital input and output
- +20% / -40% Pitch Control with tempo lock
- Power on auto-play
- Various playback modes (single / continuous, repeat, random)
- Audible quick search
- Skip back playback
- Marking and mark search
- Large, easy-to-read OLED display
- Front-panel mounted USB for connecting to a computer
- Front-panel mounted USB keyboard input for file naming and control
- Serial (RS-232c) and parallel remote inputs
- Headphone output with level control

### Overview

The Denon DN-F650R is a highly versatile professional solid state recorder offering recording to and between SD/SDHC flash card and USB external drives. Designed to fulfill the most demanding playback and recording applications in AV installation, audio production, live sound, theatre and broadcast, the DN-F650R is a professionally specified, up to date replacement for cassette, DAT, MD, CDR and commodity PC based systems currently fulfilling such roles. Balanced XLR analog audio and AES/EBU digital I/Os are featured, as well as unbalanced analog and S/PDIF connectivity. Serial, parallel and contact closure remote control

are supported, and the unit can be operated with Denon Professional's latest RC-F400S 'Hot Start' serial remote controller.

### Advanced Usability

The OLED display and easy file search jog wheel enable simple front panel operation. A USB keyboard input allows for simple file name editing. A variety of playback modes includes single, repeat, random, continuous and skip back play. Pitch control (between +20 and -40%), tempo lock, and a headphone out with volume control are also included.

### Recording and Formats

Stereo and mono audio channels are simultaneously available and both WAV and MP3 file formats are supported, with selectable sample rates of 96, 48 and 44.1 kHz, 24 and 16 bit resolution, and MP3 bit rates between 32 and 320 kbps. Cascade recording and file management capabilities between the SD / SDHC card and connected USB drive, and USB connectivity to PC enables file transfer.



\*RC-F400S compatibility available 10/2010

**D&M Professional**  
1100 Maplewood Drive Itasca, Illinois 60143  
Tel: 630.741.0330 Fax: 630.741.0652  
www.d-mpro.com

PLEASE NOTE: Specifications are based on measurement conditions and proper care for the machine, and are subject to change without notice.

# DN-F650R

Continued



## Specifications

### System

Media:	SD / SDHC, USB drives
File Format:	WAV / MP3 (MPEG-1 Layer III)
Media Format:	FAT / FAT32
MP3 Bit Rate:	32 - 320 kbps / stereo
Sampling Frequency:	96 / 48 / 44.1 kHz
Quantization:	24 / 16 bit

### Audio Section

Audio Channels:	2 (Stereo) / 1 (Mono)
Frequency Response:	20 Hz ~ 40 kHz $\pm$ 1.0 dB
S/N Ratio:	96 dB (1 kHz, 0 dB playback, A filter)
Channel Separation:	86 dB (1 kHz, 0 dB playback)
Total Harmonic Distortion:	0.01% (1 kHz, 0 dB playback)
Dynamic Range:	96 dB
Variable Pitch Control:	+20% / -40% (0.1% step)

### Inputs

Balanced Input:	Type XLR (1:GND, 2:Hot, 3:Cold)
Input Sensitivity:	+24 / +18 / +12 / 0 dBu
Input Impedance:	24 kohms
Unbalanced Input:	Type RCA
Input Sensitivity:	500 mVrms
Input Impedance:	22 kohms
Digital Input (AES/EBU):	XLR
Digital Input (S/PDIF):	RCA

### Outputs

Balanced Output:	Type XLR (1:GND, 2:Hot, 3:Cold)
Level:	+24 / +18 / +12 / 0 dBu
Unbalanced Output:	Type RCA
Level:	2 Vrms
Digital Output (AES/EBU):	XLR
Digital Output (S/PDIF):	RCA
Headphone Output:	Type TRS 1/4"
Level:	20 mW / 32 ohms

### General

Power Supply:	100V to 230V, 50/60Hz
Power Consumption:	22 W
Dimensions (W x H x D):	483 x 44 x 325 mm
Weight:	3.7 kg

### Environmental Conditions

Operating temperature:	+5°C to +35°C
Operating humidity:	25% to 85%, no condensation
Storage temperature:	-20°C to +60°C
Storage humidity:	25% to 85%, no condensation

### Included Accessories

Stereo Audio Cable:	1
USB Cable:	1
AC Cord:	1
SD door screw:	2
Retainer:	1
Operating Instructions:	1
CD-ROM for multi-language DFUs & DMP Mark Editor software:	1

### Optional Accessories

RC-F400S\*



RC600PMD



### Other Information

Carton Size (W x H x D): 593 x 198 x 464 mm  
Carton Weight: 6.0 kg  
Country of Origin: Japan

**D&M Professional**  
1100 Maplewood Drive Itasca, Illinois 60143  
Tel: 630.741.0330 Fax: 630.741.0652  
www.d-mpro.com

PLEASE NOTE: Specifications are based on measurement conditions and proper care for the machine, and are subject to change without notice.

\*Updated firmware will be released in Oct. 2010.

# P-S Series

## Power Amplifiers



P7000S

P5000S

P3500S

P2500S

P7000S Rear Panel



***Reliable, professional-quality power amplification for a broad range of applications.***

- In 4Ω bridged mode the P7000S delivers 3200 watts, the P5000S 2600 watts, the P3500S 2000 watts, and the P2500S 1300 watts.
- Yamaha's exclusive EEEngine technology significantly reduces power consumption and heat generation.
- Independent sweepable high-pass and low-pass filters on each channel so you can optimize output for subwoofer or full range systems.
- Neutrik Speakon output jacks and 1/4-inch output jacks for each channel, in addition to 5-way binding post.
- Balanced XLR and 1/4-inch TRS jacks are provided for channel input.
- Variable-speed fans offer quiet, efficient cooling.
- Comprehensive protection includes power on/off muting, DC detection, thermal protection, current limiting, and a protective cover for the attenuators.
- YS Processing (Yamaha Speaker Processing) achieves optimum matching with Yamaha Club Series loudspeaker systems.

## GENERAL SPECIFICATIONS

Model		P7000S	P5000S	P3500S	P2500S
Output Power	4Ω per channel	1100W	750W	590W	390W
	1kHz	8Ω per channel	750W	525W	275W
	THD+N=1%	8Ω / BRIDGE	2200W	1500W	780W
	4Ω per channel	950W	700W	450W	310W
	20Hz-20kHz	8Ω per channel	700W / 650W(230V)	500W	250W
	THD+N=0.1%	8Ω / BRIDGE	1900W	900W	620W
	1kHz	2Ω per channel	1600W	1000W	650W
	20ms nonclip	4Ω / BRIDGE	3200W	2000W	1300W
Sensitivity (dBu)	RL=8Ω Att. max	+8.0	+6.0	+4.0	+3.0
S/N Ratio	20Hz-20kHz (DIN AUDIO)	104dB	103dB	102dB	100dB
Idle Power Consumption		35W	35W	30W	25W
1/8 Power Consumption (4Ω)		700W	550W	450W	320W
Power Bandwidth	(half power THD+N=0.5%)	10Hz-40kHz (THD+N=0.5%)			
THD+N	20Hz – 20kHz, half power	≤ 0.1%			
Intermodulation Distortion	60Hz: 7kHz, 4:1, half power	≤ 0.1%			
Frequency Response	8Ω, Po=1W,HPF=OFF	MAX +0.5dB, TYP 0dB, MIN –1dB f=20Hz-50kHz			
Channel Separation	Half power RL=8Ω 1kHz ATT. Max input 600Ω shunt	≥ 70dB			
Residual Noise	ATT. Min 20Hz-20kHz (DIN AUDIO)	≤ -70dB			
Damping Factor	8Ω, f=1kHz	≥ 350		≥ 200	
Voltage Gain	ATT. max	32.1dB			
Input Impedance		30kΩ (balanced) 15kΩ (unbalanced)			
Controls	Front panel	POWER switch (push on/push off) attenuator (31position) x 2			
	Rear panel	MODE switch (STEREO/BRIDGE/PARALLEL), FILTER switch (SUB WOOFER/LOW CUT/OFF) x 2, FREQ.CONTROL (25Hz-150Hz) x 2, YAMAHA SPEAKER PROCESSING switch (ON/OFF )			
Connectors	Input	XLR-3-31 type/ch, 1/4" TRS/ch			
	Output	SPEAKON, 5way binding post, 1/4" phone/ch			
Indicators		POWER: x 1 (Green), PROTECTION: x 1 (Red), TEMP: x 1 (Red) heatsink temp ≥ 85°C, YS PROCESSING: x 1 (Yellow), SIGNAL: x 2 (Green), CLIP: x 2 (Red)			
Load Protection		POWER switch on/off mute, DC-fault power supply shutdown(P7000S/5000S), DC-fault power output cut (P3500S/2500S)			
Amplifier Protection		Thermal (heatsink temp ≥ 90°C), VI limiter (RL ≤ 1Ω)			
Limiter Circuit		comp. :THD ≥ 0.5%			
Cooling		Dual variable-speed fan		Single variable-speed fan	
Power Requirements		120V / 60Hz, 230V / 50Hz, 240V / 50Hz			
Dimensions (W x H x D)		480 x 88 x 456mm (18-7/8" x 3-7/16" x 17-15/16")			
Weight		12kg (26.5lbs)	12kg (26.5lbs)	15kg (33.1lbs)	14kg (30.9lbs)
Included Accessories		Security cover (with a hex wrench), Owner's Manual			

\*1: 1/8 Power = 9dB below rated power

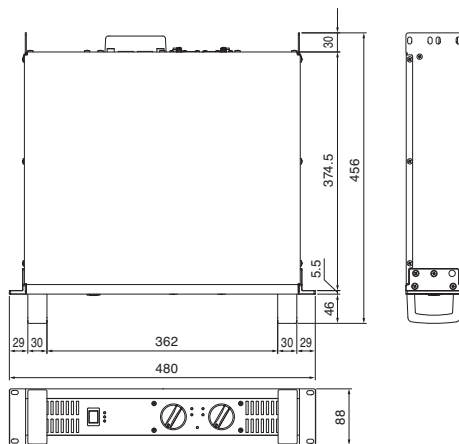
\*2: Half Power = 3dB below rated power

\*3: 0dBu = 0.775Vrms

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## DIMENSIONS

unit : mm



# ew 152 Head Set

RF Wireless Systems | evolution wireless G3

## General Description

This system is ideal for hands-free vocal and speech applications, and is particularly well-suited for on-stage performers. The system includes the lightweight ME 3 head-worn microphone. The extremely small SK 100 G3 bodypack transmitter and EM 100 G3 rack-mount receiver each feature 20 channel banks with one user bank and 12 directly accessible presets. The system is ready for immediate use.



## Kit includes:

- (1) EM 100 G3 rack-mountable receiver
- (1) SK 100 G3 bodypack transmitter
- (1) ME 3-ew cardioid headset microphone

For recommended accessories please visit [www.sennheiserusa.com](http://www.sennheiserusa.com)

## Features

- Sturdy metal housing
- Automatic frequency management for transmitter and receiver
- Tunable UHF frequencies within a large switching bandwidth
- Programmable MUTE switch
- Headset microphone with optimized acoustics
- Wireless synchronization of transmitters via infrared interface
- Enhanced frequency bank management with up to 12 compatible frequencies
- 42 MHz bandwidth, 1,680 switchable frequencies
- Increased range for audio sensitivity
- Easy-to-read illuminated dot matrix display with warning indicator
- More control options (menu)
- Enhanced AF frequency range
- Soundcheck mode
- Integrated equalizer
- Contacts for recharging the BA 2015 accupack directly in the transmitter
- (2) AA batteries for over 8 hours of use
- 4-level battery indicator for transmitter
- HDX compander for crystal-clear sound
- True diversity receiver for optimum reception
- High RF output power for large range
- Suitable for 19" rack mounting (1 U)

## Technical Specifications

### ew 100

Modulation..... wideband FM  
 Frequency ranges ..... 516–558, 566–608,  
 ..... 626–668, 734–776, 780–822, 823–865  
 Transmission/Receiving  
 frequencies ..... 20 channel banks, 1 user bank,  
 ..... 12 factory preset channels each  
 Switching bandwidth..... 42 MHz  
 Noise reduction system..... Sennheiser HDX  
 AF frequency response..... 25 – 18,000 Hz  
 S/N ratio (at 1mV and peak deviation) ..  $\geq 110$  dBA  
 THD (at nominal deviation and 1 kHz) .....  $\leq 0.9$  %

### EM 100

Receiver principle..... True Diversity  
 Sensitivity (with HDX,  
 peak deviation) .....  $< 2.5 \mu\text{V}$  at 52 dBA<sub>eff</sub> S/N  
 Adjacent channel rejection .....  $\geq 65$  dB  
 Intermodulation attenuation .....  $\geq 65$  dB  
 Blocking .....  $\geq 70$  dB  
 Pilot-tone squelch..... detachable  
 Antenna inputs ..... 2 BNC sockets  
 AF output voltage (at peak deviation,  
 1 kHz AF)..... 1/4" (6.3 mm) jack socket,  
 ..... unbalanced: +12 dBu XLR socket,  
 ..... balanced: +18 dBu  
 Power supply ..... 12 V DC  
 Dimensions ..... 7.48" x 8.35" x 1.69"  
 Weight ..... approx. 1.99 lbs

### SK 100

RF output power at 50  $\Omega$  ..... typ. 30 mW  
 AF frequency response..... 25 – 18,000 Hz (Line)  
 Max input voltage transmitter / line..... 3 V<sub>eff</sub>  
 Input impedance transmitter / line ..... 40 k $\Omega$ ,  
 ..... unbalanced / 1M $\Omega$   
 Power supply ..... 2 AA batteries, 1.5 V  
 Nominal voltage..... 2.4 V  
 Operating time ..... typ. 8 h  
 Dimensions ..... 3.23" x 2.52" x 0.94"  
 Weight ..... approx. 5.64 oz

### ME 3-ew

Transducer principle..... condenser  
 Sensitivity ..... 1.6 mV/Pa  
 Pick-up pattern ..... cardioid  
 Max. SPL ..... 150 dB SPL

# ew 152 G3 Head Set



# ew 152 <sup>G3</sup> Head Set

## RF Wireless Systems | evolution wireless G3

### Architect and Engineering Specifications

The wireless microphone system shall feature a true-diversity receiver with 42 MHz of available tuning bandwidth with a total of 1,680 frequencies accessible in 25 kHz steps. The wireless microphone receiver must feature one balanced XLR output with a max. output of +18 dBu, and one unbalanced 1/4" output with a max. output of +12 dBu. The wireless microphone receiver must feature two BNC antenna inputs, one for each receiver module in the true diversity system. The wireless microphone receiver must feature a backlit display that displays AF and RF levels, battery telemetry from the transmitter, operating frequency, and diversity switching information. The wireless microphone receiver must feature an automatic frequency scanning function that utilizes twenty (20) banks of pre-coordinated frequencies that are free of intermodulation interference. The wireless microphone receiver must also feature a user bank in order to store user defined frequencies. The wireless microphone transmitter must operate on two 1.5V AA battery cells. The wireless microphone transmitter must have access to 1,680 frequencies tuned in 25 kHz steps across a defined 42 MHz bandwidth. The wireless microphone transmitter must feature a backlit display that displays frequency information, AF level, battery level. The wireless microphone transmitter must transmit a pilot-tone squelch. The wireless microphone transmitter must have a specified RF output power of 30mW. The wireless microphone receiver must accept 12V DC power via BNC antenna inputs.

### Limited Product Warranty/Service

Sennheiser Electronic Corporation extends the following limited product warranty for Sennheiser products:

The warranty period for all covered Sennheiser products is two years from the date of purchase. Not covered by this warranty are accessories and other consumables; for example, items of wear and tear, such as cables. During the warranty period, Sennheiser Electronic Corporation warrants that the Sennheiser equipment will be free from defects in materials and workmanship used in making the product. Abnormal conditions, deliberate abuse and damage due to accidents, operator's error, or unauthorized service attempts are excluded from any warranty claims. Under this warranty, Sennheiser Electronic Corporation will repair, or at its option, replace free of charge the covered defective Sennheiser product, provided it is returned (postage paid, with proof of purchase from the original seller) to a Sennheiser Service Facility. Products should be returned in their original package, or otherwise suitably protected to avoid shipping damage. Either product registration or a valid, dated proof of purchase is accepted to establish the warranty period. The Sennheiser Service Department will be the sole authority to determine the validity of all warranty issues.

This Limited Product Warranty is Sennheiser Electronic Corporation's only warranty, and the customer's only remedy concerning Sennheiser products. All other representations and warranties, express or implied, written or oral, including, but not limited to, any warranties of merchantability, fitness for a particular purpose, or non-infringement, are expressly excluded. As a result, except as set forth in the previous paragraphs, the product is sold "as-is" and the customer is assuming the entire risk as to the product's suitability for his needs, its quality and its performance.

In no event will Sennheiser Electronic Corporation be liable for direct, indirect, special, incidental or consequential damages resulting from any defect in the product or from its use, even if advised of the possibility of such damages.



## G3FRONTKIT4

### General Description

Active splitter kit for four receiver system using front-mount antennas, includes ASA1/NT, GA3, AM2

## WL85

LCD/CFL J-Box Receiver



### DESCRIPTION

The WL85 is designed to reject interference from Plasma, LCD, LED Displays and Compact Fluorescent Lamps (CFL) from entering the IR signal line. This IR Receiver mounts easily into a single gang, electrical J-Box, is supplied with mounting screws, and comes with a Decorator-style insert, allowing the installer to use a Decorator-style wall cover plate. This provides an integrated look for control of A/V equipment behind closed doors or any IR Repeater System that is in close proximity to light sources described above.

### FEATURES

- J-Box Mounting with Decorator-style insert (available in white (included), ivory, almond, & black)
- 4-screw terminal block for interface to Xantech Connecting Blocks
- Works in normal 3-wire mode
- Improved Compact Fluorescent Light rejection
- May be used in Direct Sunlight
- RF Grid included for EMI reduction
- Talk Back LED for IR reception and full system operation indication
- Status LED for system On/Off indication (requires 12VDC Source @10mA)
- 7 units may be powered by one 781ERGPS power supply (regulated 12VDC 200mA supply)

Note: The WL85 will not operate in 2-wire Phantom Power mode

### SPECIFICATIONS

- Infrared modulation frequency bandwidth: 30 - 60 kHz
- Reception range: up to 80 feet (18M), depending on remote control output strength and ambient conditions.
- Reception angle: 55 degrees off axis at 50% range reduction
- Cable requirements: 3-conductor. Use 24-gauge up to 200' (61M), 22 gauges up to 600' (180M), 20-gauge up to 2000' (600M), 18-gauge up to 5000' (1.5KM) -- unshielded OK.
- Maximum transmission length: One mile using 18-gauge wire (1.6KM)
- Maximum current output: 100 mA (pulse)
- Dimensions: 1-3/4" W x 4-1/8" H x 1-1/8" D
- Power requirements: 12 volts DC @ 20mA

Order: WL85



## CONNECTING BLOCKS

Individual connecting blocks require IR Receiver, IR Emitters & Power supply and are also compatible with SmartPad3 Keypads

### ONE ZONE FOUR SOURCE CONNECTING BLOCK

- Connects four emitter ports and power supply to all Xantech infrared receivers and keypads
- Four parallel emitter ports with 470-Ohm resistors drive four single or four dual emitters
- Quick-connect stereo mini jack for IR Receivers that use a stereo mini plug
- STATUS terminal for connection of IR Receivers and Keypads that have status LED's
- 2.1 mm coaxial power jack
- Requires either the 781ERGPS or 782ERGPS power supply
- Dimensions: 3" x 1 3/4" x 13/16" (77mm x 45mm x 21mm)
- Power LED

Order: 78944



### ONE ZONE FOUR SOURCE CONNECTING BLOCK Five Pack

#### Save 5% On Value Pack

- Save time and money. Includes five 789-44 connecting blocks

Order: 78944CB5P

### ONE ZONE FOUR SOURCE CONNECTING BLOCK Including Power supply

- 789-44 with included 781ERGPS Power Supply

Order: 78944PSRP



### ONE ZONE FOUR SOURCE IN-WALL DECORATOR CONNECTING BLOCK

- Similar to the standard 789-44 but used in a single gang J-box configuration
- Can be used at either end of an infrared bus system
- Four parallel emitter ports on external connecting plate
- Quick connect stereo mini jack on external connecting plate for Xantech IR receivers that are equipped with the stereo mini plug
- 2.1mm coaxial power jack on external connecting plate
- Four-terminal plug in connector on the back of the plate for Power and IR Signal
- Available in white and ivory
- Dimensions: 2 15/16" x 1 3/4" x 13/16" (75mm x 45mm x 21mm)
- Requires 781ERGPS Power Supply

Order White: 78944DW

Order Ivory: 78944DI



### ONE ZONE TEN SOURCE AMPLIFIED CONNECTING BLOCK

- Emitter port jumpers permit high or low power IR output
- High-speed opto-isolator for improved operation
- Parallel emitter ports drive 10 single or 10 dual emitters
- Contains red LED input signal Test-IR
- Requires either the 781ERGPS or 782ERGPS Power Supply
- Dimensions: 6" x 2 1/4" x 15/16" (153mm x 58mm x 24mm)
- Up to nine 790-00's can be connected to the 791-44 for control of up to 100 devices in a single zone
- STATUS terminal for connection of Xantech IR Receivers and Keypads that have status indicator LED's
- Quick connect stereo mini jack for Xantech IR Receivers that use a stereo mini plug

Order: 79144





40 YEARS  
QUALITY IN CONTROL

xantech

#### **781ERGPS**

Regulated Power Supply



A high-efficiency power supply specified to provide power to all Xantech IR products. A versatile plug has a locking indentation ring providing a secure connection to all Xantech IR connecting blocks. A small form-factor allows tighter installation and reduces a clumsy rack-installation.

Input Power: 100-240VAC, 0.3A

Output Power: +12VDC, 500mA

6 foot cable, 2.1 mm coaxial secure-fit plug

**Order: 781ERGPS**

**UPC # 4277791342**

## STANDARD HIGH OUTPUT IR EMITTERS

*Minimum Requirement: IR Receiver, Connecting Block & Power Supply. Are compatible with all Xantech IR Systems*

### STANDARD HIGH OUTPUT DESIGNER EMITTER

- Non-visible, high-output version
- Deep purple Lexan™ shell
- Clear adhesive film included on emitter housing for attachment to IR window of controlled component
- Includes 3 pre-cut adhesive backings for replacement purposes
- Lead is terminated with a 3.5mm mono mini plug
- Length of wire: 10 feet

**Order: 282D**



### DESIGNER EMITTER Value Pack

**Save 5% On 5 Pack Order: 282D5P**

**Save 10% On 10 Pack Order: 282D10P**

### DESIGNER Pro

- Same Xantech performance as 282
- Quick connect for easy service

**Order: 282DPRO**



### DESIGNER EMITTER With Twin Plug

- 282D high-output Designer Emitter with two 3.5mm plugs
- Allows control of single source by two IR systems
- Diode isolation for independent control and component protection
- Wire length: 10 feet

**Order: 282DTP**



### 'NAKED' EMITTER

282M high-output Emitter with no shell surrounding emitter head

- Allows insertion of emitter inside component case for the cleanest appearance possible
- Wire length: 10 feet

**Order: 282X**



### DUAL DESIGNER EMITTER

- Two emitters in series with each other and terminated in a single 3.5mm mono mini plug
- Length of wire: 7 feet to junction, 3 feet to each emitter
- Non-visible, high output version

**Order: 284D**



### DUAL DESIGNER EMITTER Value Pack

**Save 5% On 5 Pack Order: 284D5P**

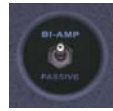
**Save 10% On 10 Pack Order: 284D10P**

# Installation Series

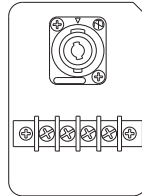
## Speaker System



IF2112



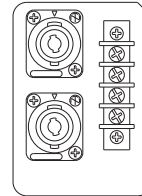
IF2112 (M)  
Rear Panel



IF2112/AS



IF2112/AS  
Rear Panel



IF2112

IF2112M

IF2112/AS

*Two-way full-range models with 12-inch woofers deliver extraordinarily well-balanced sound.*

- Sound and phase characteristics matched with all other Installation Series models for optimum performance in any combination.
- 12" woofer specially treated for superior sound and durability.
- 3" high-frequency compression driver with 1.4" exit (IF2112 and IF2112/AS) or 1.7" high-frequency compression driver with 1.4" exit (IF2112M).
- Three horn dispersion patterns available for IF2112 and IF2112M: 60° x 40° (/64), 90° x 50° (/95), and 90° x 90° (/99).
- Horn can be rotated 90-degrees for vertical or horizontal mounting.
- Switchable between passive and bi-amp operation.
- Fifteen 10-mm (M10) screw and four 8-mm (M8) screw suspension points provided for flexible rigging on the IF2112 and IF2112M; 16 10-mm screw (M10) points on the IF2112/AS.
- Durable black or white finish (can be painted to match any interior).
- Optional matching array frame and U-bracket available for the IF2112 and IF2112M.
- Optional matching U-bracket available for the IF2112/AS.
- Parallel-wired Neutrik NL4 and barrier strip connectors.
- Downloadable Y-S3 (Yamaha Sound System Simulator) software offers precise performance simulation for Installation Series speakers.
- IF2112/AS cabinet design is also ideal for floor monitor use.

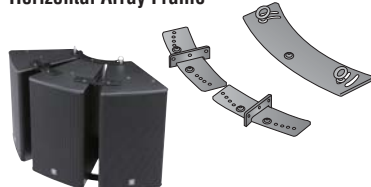
### OPTIONS

#### Accessories

Durable black or white finish which can be painted to match any interior.

#### HAF3-2112

Horizontal Array Frame



Weight:  
9kg (19.8lbs)

\*available for IF2112 and IF2112M

#### HAF2-2112

Horizontal Array Frame



Weight:  
4kg (8.8lbs)

\*available for IF2112 and IF2112M

#### VAF2-2112

Vertical Array Frame



Weight:  
4kg (8.8lbs)

\*available for IF2112 and IF2112M

#### UB2112

U-Brackets



Weight:  
4kg (8.8lbs)

Download the Rigging Guide from Yamaha's website for rigging details:

<http://www.yamahaproaudio.com/>

# Installation Series

## GENERAL SPECIFICATIONS

MODEL	IF2112/64(W)		IF2112/95(W)		IF2112/99(W)		IF2112/AS(W)	
Nominal coverage @-6dB (Horizontal x Vertical)	60 x 40 (rotatable)		90 x 50 (rotatable)		90 x 90		60-100 x 60 (rotatable)	
Nominal impedance	Passive		8Ω		8Ω			
Power rating	Bi-amp LF/HF	NOISE	LF:8Ω, HF:8Ω					
		PGM	600W					
		MAX	1200W					
	Bi-amp LF/HF	NOISE	LF:700W, HF:110W					
		PGM	LF:1400W, HF:220W					
		MAX	LF:2800W, HF:440W					
Recommended amplifier	Passive		T5n, PC9501N, XP7000					
Sensitivity (1W, 1m)	Bi-amp LF/HF		LF:T5n, PC9501N, HF:XP1000, PC2001N					
	Passive		96dB SPL					
Continuous SPL (calculated)	Bi-amp LF/HF		110dB SPL		108dB SPL		108dB SPL	
	Passive		130dB SPL		124dB SPL		128dB SPL	
Peak SPL (calculated)	Bi-amp LF/HF		136dB SPL		134dB SPL		132dB SPL	
	Passive		130dB SPL		130dB SPL		134dB SPL	
Components	LF		12" woofer, 4" voice coil					
Frequency range (-10dB) *	HF		Rotatable constant directivity horn, 1.4" exit, 3" voice coil compression driver		50Hz-20kHz			
Passive Crossover Frequency *			900 Hz		1.2 kHz		1.1 kHz	
Connectors			1x NL4 and barrier strip, wired in parallel				2x NL4 and barrier strip, wired in parallel	
Shape			30 degrees trapezoidal				Multi-angle wedge	
Dimensions (W x H x D)			378 x 695 x 454mm (14.9" x 27.4" x 17.9")				378 x 695 x 333mm (14.9" x 27.4" x 13.1")	
Weight			31.0kg (68.0lbs)				29.0kg (64lbs)	
Flying hardware			15 x M10, 4 x M8				16x M10	
Optional accessories			UB2112(W), HAF2-2112(W), HAF3-2112(W), VAF2-2112(W)				UB2112(W)	
3rd Party Accessories	Omnimount (US)		120.0 series				-	
	Multimount (US, Allen products)		120 series				-	
	Powerdrive (UK)		120 series				-	
	Ohashi (Japan)		-				-	

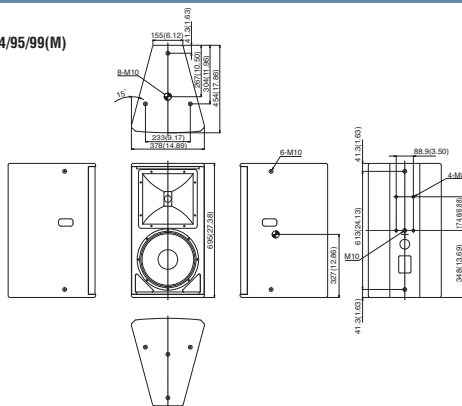
\*1 2hours, IEC \*2 AES \*3 Bi-amp mode, Yamaha recommended DSP configuration, full-space \*4 At this frequency, the transducers produce equal sound pressure levels.

MODEL	IF2112M/64(W)		IF2112M/95(W)		IF2112M/99(W)	
Nominal coverage @-6dB (Horizontal x Vertical)	60 x 40 (rotatable)		90 x 50 (rotatable)		90 x 90	
Nominal impedance	Passive		8Ω			
Power rating	Bi-amp LF/HF	NOISE	LF:8Ω, HF:8Ω			
		PGM	350W			
		MAX	700W			
	Bi-amp LF/HF	NOISE	LF:400W, HF:60W			
		PGM	LF:800W, HF:120W			
		MAX	LF:1600W, HF:240W			
Recommended amplifier	Passive		T3n, PC6501N, XP7000			
Sensitivity (1W, 1m)	Bi-amp LF/HF		LF:T3n, PC6501N, XP7000, HF:XP1000, PC2001N			
	Passive		95dB SPL			
Continuous SPL (calculated)	Bi-amp LF/HF		110dB SPL		108dB SPL	
	Passive		120dB SPL		121dB SPL	
Peak SPL (calculated)	Bi-amp LF/HF		128dB SPL		126dB SPL	
	Passive		134dB SPL		132dB SPL	
Components	LF		12" woofer, 3" voice coil			
Frequency range (-10dB) *	HF		Rotatable constant directivity horn, 1.4" exit, 1.7" voice coil compression driver		55Hz-20kHz	
Passive Crossover Frequency *			1 kHz		1.1 kHz	
Connectors			1x NL4 and barrier strip, wired in parallel			
Shape			30 degrees trapezoidal			
Dimensions (W x H x D)			378 x 695 x 454mm (14.9" x 27.4" x 17.9")			
Weight			28.0kg (61.0lbs)			
Flying hardware			15 x M10, 4 x M8			
Optional accessories			UB2112(W), HAF2-2112(W), HAF3-2112(W), VAF2-2112(W)			
3rd Party Accessories	Omnimount (US)		120.0 series			
	Multimount (US, Allen products)		120 series			
	Powerdrive (UK)		120 series			
	Ohashi (Japan)		-			

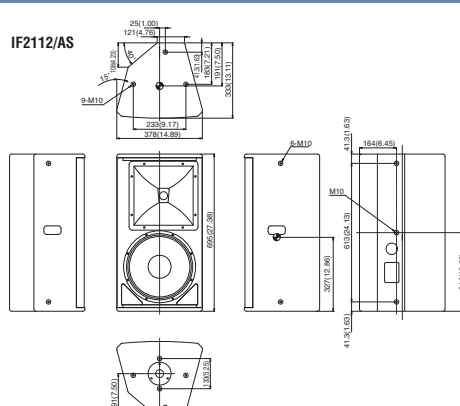
\*1 2hours, IEC \*2 AES \*3 Bi-amp mode, Yamaha recommended DSP configuration, full-space \*4 At this frequency, the transducers produce equal sound pressure levels.

## DIMENSIONS

IF2112/64/95/99(M)



IF2112/AS



Center of balance

unit : mm(inch)

# Concert Club V Series

## Subwoofer

### SW218V



### CW218V



### SW118V



### CW118V



### SW115V



### CW115V

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***Rugged subs extend low response for solid sonic impact.***

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***Subwoofers that can add serious authority to your low end.***

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- Painstaking selection of parts and components, optimized wooden enclosures, and a thorough reevaluation of speaker capacity take sonic performance to a new level.
- Dual phone jacks and dual Speakon connectors for input and parallel connection.
- Advanced bass-reflex design for smooth bass response
- Durable exterior with a carpeted surface, arced steel grille, and large metal handles for improved portability.
- Ideally matched to Yamaha powered mixers and power amplifiers.

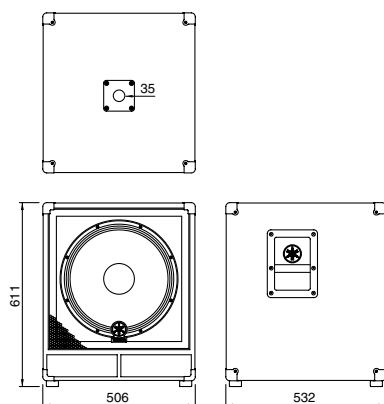
## Concert Club V Series

### GENERAL SPECIFICATIONS

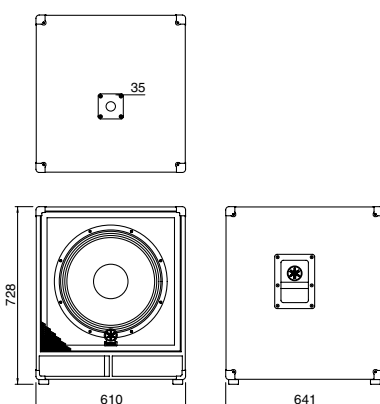
	SW115V/CW115V	SW118V/CW118V	SW218V/CW218V
Type		Bass-reflex	
Frequency range (-10dB)	35Hz-2kHz	30Hz-2kHz	30Hz-2kHz
Nominal impedance	8		4
Power rating	NOISE	250W	300W
	PGM	500W	600W
	MAX	1000W	1200W
sensitivity (1W,1m)	95dB SPL	96dB SPL	98dB SPL
Component	15" cone	18" cone	18" cone x 2
Connectors	1/4" phone jack x 2, SPEAKON Neutrik NL4MP x 2		
Dimensions (W x H x D)	506 x 611 x 532 (19.9" x 24.1" x 20.9")	610 x 728 x 641 (24.0" x 28.7" x 25.2")	1221 x 578 x 659 (48.1" x 22.8" x 25.9")
Weight	SW115V: 28.2kg (62.2lbs)/CW115V: 28.0kg (61.7lbs)	SW118V: 39.0kg (86.0lbs)/CW118V: 37.2kg (82.0lbs)	SW218V: 65.4kg (144.2lbs)/CW218V: 64.7kg (142.6lbs)

### DIMENSIONS

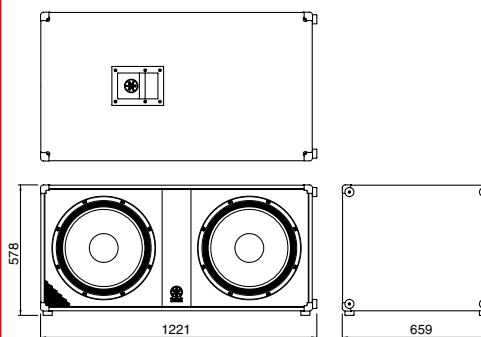
unit : mm



SW115V/CW115V



SW118V/CW118V



SW218V/CW218V



# Product Specifications

## SM58® Cardioid Dynamic Microphone

### Overview

The legendary SM58® is an industry-standard, highly versatile cardioid dynamic vocal microphone that is consistently the first choice of vocal performers around the globe. Even in extreme conditions, the SM58 is tailored to target the main sound source while minimizing background noise, delivering warm and clear vocal reproduction.

### Features

- Frequency response tailored for vocals, with brightened midrange and bass rolloff
- Uniform cardioid pickup pattern isolates the main sound source and minimizes background noise
- Pneumatic shock-mount system cuts down handling noise
- Effective, built-in spherical wind and pop filter
- Supplied with break-resistant stand adapter which rotates 180 degrees
- Legendary Shure quality, ruggedness and reliability
- Cardioid (unidirectional) dynamic
- Frequency response: 50 to 15,000 Hz

### Available Models

SM58-LC	Includes Stand Adapter and Zippered Pouch
SM58-CN	Includes 7.6 m (25 ft) XLR-Male to XLR-Female Cable, Swivel Adapter and a Zippered Pouch
SM58S	Includes Integrated On/Off Switch, Swivel Adapter and a Zippered Pouch

### Specifications

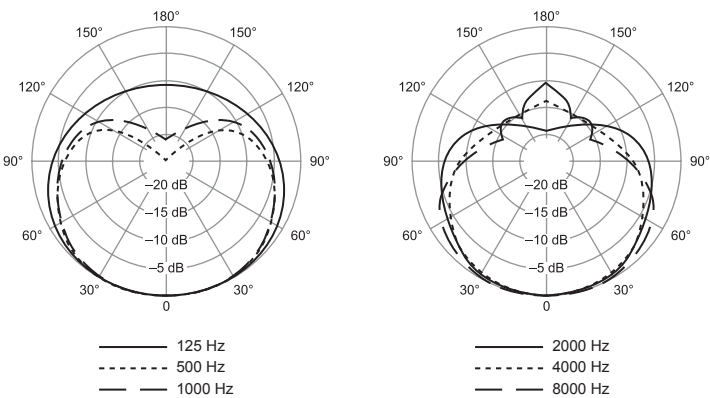
Type	Dynamic
Frequency Response	50 to 15,000 Hz
Polar Pattern	Cardioid
Sensitivity (at 1,000 Hz Open Circuit Voltage)	-54.5 dBV/Pa (1.85 mV) 1 Pa = 94 dB SPL
Impedance	Rated impedance is 150Ω (300Ω actual) for connection to microphone inputs rated low impedance
Polarity	Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3.
Case	Dark gray, enamel-painted, die cast metal; matte-finished, silver colored, spherical steel mesh grille
Connector	Three-pin professional audio connector (male XLR type)
Connector	Three-pin professional audio connector (male XLR type)
Net Weight	298 grams (10.5 oz)
Dimensions	162 mm (6-3/8 in.) L x 51 mm (2 in.) W



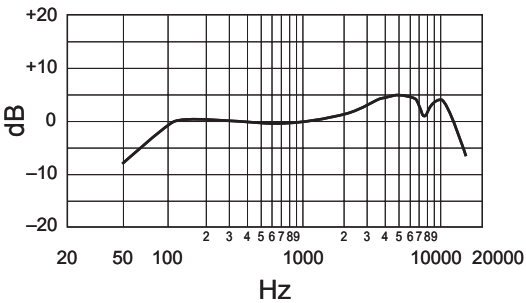
SM58

### Optional Accessories and Replacement Parts

A58WS	Windscreen	A55M	Isolation Mount	C25F	7.6 m Cable (25 ft)
A25D	Microphone Clip	A26M	Dual Mount	RK143G	Screen and Grille
R59	Cartridge	S37A, S39A	Desk Stand		



Polar Pattern



Frequency Response

**SHURE**  
LEGENDARY  
PERFORMANCE™



### AMERIQUEAD™ L0-Z

Studio Reference Microphone Cable with Quad Construction



- Neutrik® NC3FX/MX-B Gold Contact, Black Shell XLR Connectors
- 4 x 24 AWG (0.20mm²) Pro Co 424B "AmeriQuad" Wire in Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Grey, and White
- 96% Coverage Copper Braid Shield
- Excellent Sound Transmission, Minimum RFI/EMI, Maximum Hum Cancellation
- Colored Connector Boots are Available for Individual Identification during Stage or Studio Use
- 20 Year Warranty



STANDARD MODEL #	LENGTH (FEET)
AQ 5	5
AQ 10	10
AQ 15	15
AQ 20	20
AQ 25	25
AQ 30	30
AQ 50	50

### MASTERMIKE™ L0-Z

Built for the Road



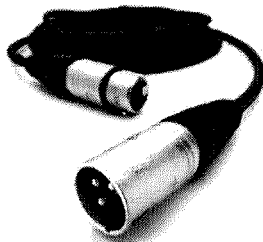
- Neutrik NC3FX/MX-BAG Silver Contact, Black Shell XLR Connectors
- 2 x 23 AWG (0.26mm²) Pro Co 223B "DynaMike" Wire in Black
- 94% Coverage Copper Braid Shield
- 10 Year Warranty
- Also Available with Integrated ON/OFF Switch



STANDARD MODEL #	LENGTH (FEET)
M 5	5
M 10	10
M 15	15
M 20	20
M 25	25
M 30	30
M 50	50
M 100	100
<i>Also available with on/off switch:</i>	
M 25SW	25

### EXCELLINES™ L0-Z

Rugged and Flexible Microphone Cable



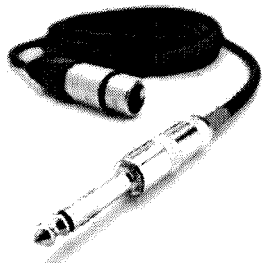
- Neutrik NC3FXY/MXY Silver Contact, Nickel Shell, IDC-type Solderless XLR Connectors
- 2 x 24 AWG (0.20mm²) Pro Co 224S "DynaMike" Wire in Black
- 90% Coverage Copper Spiral Shield
- 5 Year Warranty



STANDARD MODEL #	LENGTH (FEET)
EXM 3	3
EXM 5	5
EXM 10	10
EXM 15	15
EXM 20	20
EXM 25	25
EXM 30	30
EXM 50	50
EXM 100	100

### EXCELLINES HI-Z

Rugged Cable for Hi-Z Microphones and P.A.s



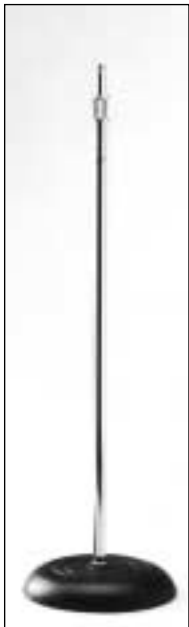
- Neutrik NC3FX Silver Contact, Nickel Shell Female XLR Connector to 1/4" (ø6.35mm) BigFoot™ Phone Plug
- Single Conductor 20 AWG (0.52mm²) Pro Co 120S1 Wire in Black
- Available with Pin 2 (Pro Co Standard) or Pin 3 Hot
- 100% Coverage Extruded Barrier PVC Shield plus 55% Coverage Copper Spiral Shield
- 5 Year Warranty



STANDARD MODEL #	LENGTH (FEET)
EXH20/P2H	20
EXH20/P3H	20

Specifications Subject To Change Without Notice.





MS-12C



MS-12CE

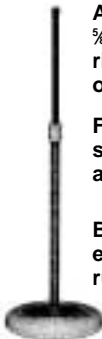
FEATURES

- Economical, General Purpose Floor Stands Suitable for a Variety of Applications
- Wearproof, Three-Piece Clutch Offers Secure, Fast, and Noise-Free Height Adjustment
- Circular Cast Iron Base Ensures Maximum Stability
- Contemporary Styling Includes Choice of Three Finish Combinations
- Field Serviceable Parts Guarantee Long Product Life

Steel tubing is finished in a choice of mirrored chrome or non-reflective ebony epoxy (E).

Anti-vibration cap absorbs incidental vibrations and sounds.

Lock-nut ring securely positions tubing to base.



Atlas Sound stands are threaded  $\frac{5}{8}$ "-27 and include a lock-nut ring for versatile positioning of accessories.

Famous Atlas Sound clutch won't slip under pressure. Three-piece assembly is also field serviceable.

Bases are high-stability cast metal equipped with shock absorbing rubber pads.

APPLICATIONS

Rely on Atlas Sound® brand microphone stand Models MS-12C/MS-12CE for years of dependable service in schools, churches, clubs, restaurants, lecture halls, auditoriums, meeting rooms or wherever sound reinforcement or communications systems are applied. Superior construction and quality surface finishes provide years of extensive use and withstand frequent transportation.

GENERAL DESCRIPTION

**MS-11C / MS-12C / MS-12CE.** These professional full-height microphone stands feature a low profile base for stage and studio use. Practical features and rugged construction are combined in Models MS-12C, and MS-12CE to produce superior general purpose microphone stands. Each model includes the famous Atlas Sound® wearproof clutch with positive locking control for microphone height placement.

Stand construction is of  $\frac{5}{8}$ " and  $\frac{7}{8}$ " dia. heavy-duty welded cold rolled steel tubing with  $\frac{5}{8}$ " - 27 male thread termination to accommodate standard microphone holders and accessories (see reverse side). Top and bottom lock-nut rings are included for versatile and secure positioning. The one-piece low silhouette cast iron base includes anti-tip stabilizers.

Model MS-12C combines a chrome upright tube assembly with cast base finished in ebony, whereas the entire Model MS-12CE assembly is finished in non-reflective ebony epoxy.

MODEL	HEIGHT SPAN	BASE DIA.	TUBE FINISH	BASE FINISH	WEIGHT
MS-12C	(86 - 158 cm)	(25 cm)	Chrome	Ebony	9.0 lbs. (4.1 kg)
MS-12CE			Ebony	Ebony	9.0 lbs. (4.1 kg)

Specifications subject to change without notice



1601 JACK MCKAY BLVD. / ENNIS, TEXAS 75119 U.S.A. / TELEPHONE: (800) 876-3333 / FAX (800) 765-3435

## Technical Data Sheet Communication Cables



# WEST PENN WIRE

2833 West Chestnut Street  
Washington, PA 15301  
Toll Free: (800) 245-4964  
Fax: (724) 222-6420  
[www.westpenn-wpw.com](http://www.westpenn-wpw.com)

---

<b>PART NUMBER:</b>	<b>292</b>
<b>DESCRIPTION:</b>	20/2 Stranded tinned copper conductors, shielded with an overall jacket.
<b>NEC RATING:</b>	CMR, NEC Article 800
<b>APPROVALS:</b>	(UL) C(UL) Listed or c(ETL)us Listed
<b>APPLICATION:</b>	Indoor for: Intercom, Security, Sound, Audio, Background Music, and Power Limited Control Circuits.

---

### Construction Parameters:

Conductor	20 AWG Tinned Copper
Stranding	7x28
Insulation Material	PVC
Insulation Thickness	0.010" Nom.
Number of Conductors	2
Shield	100% Aluminum Polyester Foil
Drain	Stranded Tinned Copper
Jacket Material	PVC
Jacket Thickness	0.015" Nom.
Overall Cable Diameter	0.142" Nom.
Approximate Cable Weight	15.6 Lbs/1M' Nom.
Flame Rating	UL 1666 Riser Flame Test

---

### Electrical & Environmental Properties:

Temperature Rating	-20°C To +60°C
Operating Voltage	300 V RMS
Max.Capacitance Between Conductors @ 1 KHz	60 pf/ft Nom.
Capacitance Between Conductors to Shield @ 1 KHz	108 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	10.5 Ohms/1M' Nom.
Insulation Colors	Black, Red
Jacket Color	Gray
RoHS Compliant	Yes

---

### Mechanical Properties:

Max. Recommended Pull Tension	37.1 lbs.
Min. Bend Radius (Install)	1.5"

---

Specification Issue Date: 7/06

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## Technical Data Sheet Communication Cables

# WEST PENN WIRE



2833 West Chestnut Street  
Washington, PA 15301  
Toll Free: (800) 245-4964  
Fax: (724) 222-6420  
www.westpenn-wpw.com

---

<b>PART NUMBER:</b>	<b>226</b>
<b>DESCRIPTION:</b>	14/2 STRANDED BARE COPPER CONDUCTORS, UNSHIELDED WITH AN OVERALL JACKET.
<b>NEC RATING:</b>	CL3R, NEC Article 800
<b>APPROVALS:</b>	(UL) C(UL) Listed or c(ETL)us Listed
<b>APPLICATION:</b>	Indoor for: Intercom, Security, Sound, Audio, Background Music, and Power Limited Control Circuits

---

### Construction Parameters:

Conductor	14 AWG Bare Copper
Stranding	19x27
Insulation Material	PVC
Insulation Thickness	0.010" Nom.
Number of Conductors	2
Shield	None
Drain	None
Jacket Material	PVC
Jacket Thickness	0.015" Nom.
Overall Cable Diameter	0.234" Nom.
Approximate Cable Weight	36.2 Lbs/1M' Nom.
Flame Rating	UL 1666 Riser Flame Test

---

### Electrical & Environmental Properties:

Temperature Rating	-20°C To +60°C
Operating Voltage	150 V RMS
Max.Capacitance Between Conductors @ 1 KHz	31 pf/ft Nom.
DC Resistance per Conductor @ 20deg C	2.7 Ohms/1M' Nom.
Insulation Colors	Black , White
Jacket Color	Gray, Brown, Yellow, White
RoHS Compliant	Yes

---

### Mechanical Properties:

Max. Recommended Pull Tension	59 lbs.
Min. Bend Radius (Install)	2.25"

---

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## 8-Port 10/100Mbps PoE Fast Ethernet Switch

### TPE-S44 (A2.1R)

TPE-S44 8-Port Smart Switch integrates Power over Ethernet (PoE) and network management features into a cost effective and scalable solution. The TPE-S44 reduces equipment cost by delivering data and power over existing network cable infrastructure.

## FEATURES

- IEEE 802.3af Power over Ethernet (PoE) Standard Compliant
- 8 x 10/100Mbps Auto-Negotiation and Auto-MDIX Fast Ethernet RJ45 Ports
- Built-in 4 PoE Ports (Port 1 ~ Port 4)
- Supports PoE Power Maximum 15.4 watts for each POE port
- Supports PoE Powered Device(PD) classification identify
- Full Wire-Speed Non-Blocking Reception and Transmission
- Store and Forward Switching Method
- 96Kbytes RAM Data Buffer and 1K entries MAC Address Table
- Extensive Diagnostic LED's on the Front Panel
- IEEE 802.3x Flow Control for Full-Duplex Mode; Back Pressure Flow Control for Half-Duplex Mode
- 3-Year Warranty

# 8-Port 10/100Mbps PoE Fast Ethernet Switch

TPE-S44 (A2.1R)



## SPECIFICATIONS

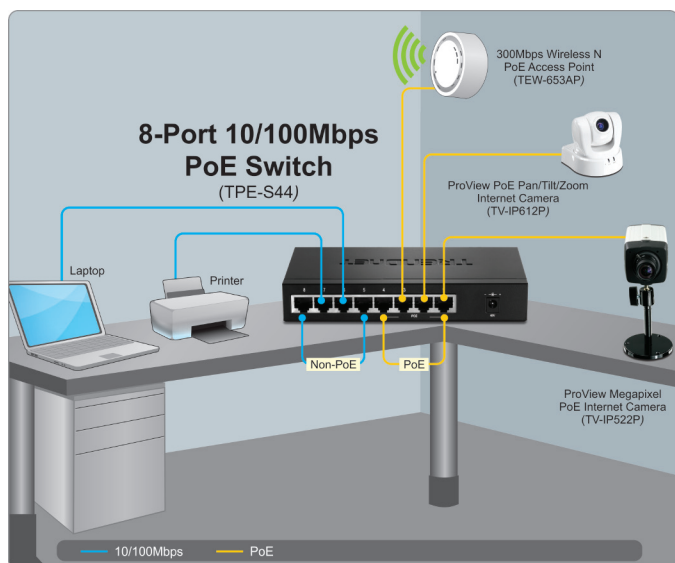
### HARDWARE

<b>Standard</b>	<ul style="list-style-type: none"><li>• IEEE 802.3 10Base-T</li><li>• IEEE802.3u 100Base-TX</li><li>• IEEE 802.3af Power over Ethernet</li></ul>
<b>Network Media</b>	<ul style="list-style-type: none"><li>• 10Mbps: Cat 3,4,5 Unshielded Cable</li><li>• 100Mbps: Cat 5, 5E, 6 Unshielded Cable</li></ul>
<b>Protocol / Topology</b>	<ul style="list-style-type: none"><li>• CSMA/CD ; Star</li></ul>
<b>Ports</b>	<ul style="list-style-type: none"><li>• 4 x 10/100Mbps Auto-MDIX POE Ports (1~4)</li><li>• 4 x 10/100Mbps Auto-MDIX Fast Ethernet Ports (5 ~8)</li></ul>
<b>Data Transfer Rate</b>	<ul style="list-style-type: none"><li>• Ethernet: 10/20Mbps (half/full duplex)</li><li>• Fast Ethernet: 100/200Mbps (half/full duplex)</li></ul>
<b>RAM Buffer / Filtering</b>	<ul style="list-style-type: none"><li>• 96 Kbytes / 1K entry per device</li></ul>
<b>Power</b>	<ul style="list-style-type: none"><li>• 48V DC 0.8A External Power Adapter</li></ul>
<b>Diagnostic LEDs</b>	<ul style="list-style-type: none"><li>• Per Unit: Power, Power MAX</li><li>• Per Port: Link/Activity, Speed</li><li>• PoE: PoE Status, Link/Activity, Speed</li></ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"><li>• 6.3 watts max (no PD Device connected)</li><li>• 36.3 watts max (with 30w PoE Device connected)</li></ul>
<b>Temperature</b>	<ul style="list-style-type: none"><li>• Operating: 0° ~ 40° C (32° ~ 104°F)</li><li>• Storage: -10° ~ 70° C (14° ~ 158°F)</li></ul>
<b>Humidity</b>	<ul style="list-style-type: none"><li>• 10%- 90% (non-condensing)</li></ul>
<b>Dimensions</b>	<ul style="list-style-type: none"><li>• 171 x 98 x 29mm (6.7 x 3.7 x 1.1in.)</li></ul>
<b>Weight</b>	<ul style="list-style-type: none"><li>• 430g (13.8oz.)</li></ul>
<b>Certification</b>	<ul style="list-style-type: none"><li>• FCC, CE</li></ul>

### PoE

<b>Power over Ethernet</b>	<ul style="list-style-type: none"><li>• Up to 15.4 watts per Port; PD classification Identify</li><li>• PoE Over Current Protection; PoE Circuit Sorting Protection</li><li>• PoE Power on RJ-45 pin 3,6 for Power+ and pin 1,2 for Power</li></ul>
----------------------------	---

## NETWORKING SOLUTIONS



## PACKAGE CONTENTS

TPE-S44
Multi-Language Quick Installation Guide
Power Adapter (48V DC, 0.8A)

## RELATED PRODUCTS

<b>TPE-111GI</b>	Gigabit Power over Ethernet (PoE) Injector
<b>TPE-112GS</b>	Gigabit Power over Ethernet (PoE) Splitter
<b>TPE-80WS</b>	8-Port Gigabit Web Smart PoE Switch
<b>TPE-224WS</b>	24-Port 10/100Mbps Web Smart PoE Switch with 4 Gigabit Ports and 2 Mini-GBIC Slots

## CONTACT INFORMATION



20675 Manhattan Place, Torrance, CA 90501 USA  
Tel: 1-310-961-5500  
Fax: 1-310-961-5511  
Web: [www.trendnet.com](http://www.trendnet.com)  
Email: [sales@trendnet.com](mailto:sales@trendnet.com)  
**1-888-326-6061**





# DBT-1713UD

Universal Audio/Video Player

# DENON

PROFESSIONAL

## Denon 3D Universal disc player with versatile media and streaming service supports

Denon's 3D 'Universal' disc playback technology provides playback of virtually all popular disc formats, including high definition Blu-ray discs, as well as DVD-Audio and Super Audio CD high resolution stereo and multi-channel music format discs, along with DVD-Video and music CD playback. The DBT-1713UD also supports playback of your locally stored music, photo and video content via network (DLNA 1.5) and USB, as well as versatile online video streaming services such as Netflix, Youtube, Hulu Plus, and VUDU, all with Denon superb audio and video technology.



### Features

#### New Features

- Design Matching to the new Denon A/V Receivers
- Wide variety of video streaming, movies, videos, TV shows (YouTube, Netflix, VUDU, Hulu Plus)



- Quick response for disc loading and playback (20% faster than current model)
- Quick Start mode, enables fast access to play
- New servo circuit, to reduce moving noise of pickup mechanism
- HDMI cable included (HIGH SPEED HDMI™ CABLE)

\*Netflix is available in certain countries. Unlimited membership required. More information at [www.netflix.com](http://www.netflix.com).

#### Denon Technologies for superior sound and picture quality

- Universal Disc Playability (Blu-ray, DVD-Audio, DVD-Video, Super Audio CD, CD)
- DLNA 1.5 Support and front USB port for music, photo, video contents playback
- 1080p/24 video output, to bring out the full quality of film
- HDMI source direct mode to output native resolution of the disc
- Picture adjustments
- Playing high-quality audio, using by pure direct function

#### Build Quality

- Fully Shielded Mechanism, suppress internal and external vibrations and electromagnetic noises for high precision disc playability at all times
- Separated 4-block construction for faithful playback of audio and video signals (Disc mechanism, Video/Audio, Power supply, and Indicator block)
- Fan-less construction for noise reduction
- Solid cabinet and large foot

#### Ease of Use

- Easy-to-use Multi language GUI and CD-ROM interactive manual
- User-friendly GUI
- Easy-to-use remote control handset
  - Glow-key for cursor keys and operation keys
  - Direct access for online video services
  - Remote Control also controls Denon AV receiver for convenience
- New "Denon Remote App" control via 2012 new Denon networking A/V Receivers<sup>\*1)</sup>

#### Others

- One stereo channel (2ch) output for Multi-zone
- Eco Stand-by mode, lower power consumption (0.3W)
- Detachable AC cord

<sup>\*1)</sup> The DBT-1713UD has remote control functionality by using the new "Denon Remote App" together with Denon new A/V Receiver such as AVR-1713.



Design Matching to the new Denon A/V Receivers



Fully Shielded Mechanism



Easy-to-use remote control handset

#### Versatile Disc Formats Playability

- BD-Video
- BD-R
- BD-RE
- DVD-Video
- DVD-Audio
- DVD+R, DVD+RW  
(Video mode, AVCHD format)
- DVD-R, DVD-RW  
(Video mode, AVCHD format)
- Super Audio CD
- Audio CD
- CD-R, CD-RW

#### Playable files

	BD-R/-RE DVD-R/-RW/+R/+RW/ CD-R/-RW	Playable media USB memory device	Network
MP3 (.mp3)	•	•	•
WMA (.wma)	•	•	•
AAC (.m4a)	•	•	•
LPCM (.wav)	•*1	•	•
FLAC (.flac)	•*1	•	•
JPEG (.jpg/.jpeg)	•	•	•
PNG (.png)	•	•	•
DivX® (.avi/.divx/.mkv)	•*1	•	•
MPEG (.mpeg/.mp4/.ts/.m2t)	•*1	•	•
WMV (.wmv)	•*1	•	•
AVI (.avi)	•*1	•	•

\* Depending on recording conditions (Bit-rate), these files may not be playable.

\*1) Except CD-R/-RW.

#### Main Specifications

Video	
Signal format	NTSC, PAL
Audio output characteristics	
S/N	115 dB (BD)
Total harmonic distortion	1 kHz, 0.0025% (BD)
Dynamic range	100 dB (BD)
General	
Power supply	120V, 60Hz
Power consumption	20 W 0.3 W (Energy Saving Standby) 0.5 W (Normal Standby) 12 W (Quick Start)
Dimensions W x H x D	17 3/32" x 4 1/4" x 11 39/64" 434 x 108 x 295 mm
Weight	10 lbs 13 oz, 4.9 kg

#### Ports

Video	HDMI output	1
Audio	Analog output (2ch, L/R)	1
Control	Ethernet	1
	USB port	1
	Remote control (IN/OUT)	1 / 1

\*Design and specifications are subject to change without notice.

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High Speed HDMI™ Cable Included



D&M Professional, Americas

1100 Maplewood Drive, Itasca, Illinois 60143 USA  
TEL: 630-741-0330  
www.d-mpro.com

D&M Holdings Inc.

D&M Building, 2-1 Nishin-cho, Kawasaki-ku, Kawasaki-shi,  
Kanagawa, 210-8569, Japan  
www.denon.com

20100511A

# MPS 601

## MEDIA PRESENTATION SWITCHER

- ▶ Integrates HDMI, RGB, and audio sources into presentation systems
- ▶ Digitizes RGB and analog audio signals, and switches them through the HDMI output
- ▶ EDID Minder® automatically manages EDID communication between connected devices
- ▶ Supports PC-video to 1920x1200, including HDTV 1080p/60 and 2K
- ▶ Supported HDMI specification features include data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, Lip Sync, and HD lossless audio formats
- ▶ HDCP compliant
- ▶ Multiple control options including front panel, RS-232, contact closure, and auto-input switching
- ▶ Rack-mountable, 1U, half-rack width metal enclosure



The Extron MPS 601 is a compact six input, one output media presentation switcher for HDMI, RGB, and audio sources. Analog signals are digitized and switched through the HDMI output along with native HDMI signals, providing a single video format and cable connection to the display. The MPS 601 is ideal for applications that require the routing of digital and analog sources to a single display.



**Extron Electronics**  
INTERFACING, SWITCHING AND CONTROL

## DESCRIPTION

---

The Extron MPS 601 is a compact six input, one output media presentation switcher for digital and analog sources. It offers four, HDCP-compliant HDMI inputs and two RGB video inputs with analog stereo audio. RGB video and analog audio are digitized and switched through the HDMI output. The MPS 601 features EDID Minder®, which maintains continuous EDID communication with connected devices and ensures that the sources power up properly and maintain correct video output. Multiple control points, including front panel, RS-232, contact closure with tally output, and auto-input switching, simplify integration into a variety of system designs. The MPS 601 is ideal for applications that require the routing of digital and analog sources to a single display.

For ease of integration, analog audio inputs can be assigned. In normal operation, the analog audio inputs follow the corresponding RGB input. Alternately, they can be assigned to follow preset groups of digital and RGB inputs. This enables the grouped inputs to share a common analog audio input.

The MPS 601 offers integrator-friendly features, including cable equalization on each HDMI input, automatic color bit depth management, indicators for monitoring and troubleshooting, as well as peripheral device powering. Automatic input cable equalization corrects for signal loss due to lengthy input cables, ensuring signal integrity for up to 50 feet (15 meters) of Extron HDMI Pro Series cable at 1080p/60 with 8-bit color. To prevent color compatibility conflicts between the source and display, the switcher automatically adjusts color bit depth based on the display EDID. Front panel LED indicators provide immediate visual confirmation of HDCP authentication and signal presence for each input and the output. The MPS 601 also provides +5 VDC, 250 mA on the HDMI output for powering peripheral devices such as the HDMI 101 Plus cable equalizer.

The MPS 601 provides multiple control points, allowing for streamlined integration into various environments. Convenient control options include front panel, RS-232, contact closure with tally, and auto-input switching. The six contact closure ports with tally allow for remote selection and output muting of an input via a simple push-button control. Housed in a 1U half-rack width metal enclosure, the compact MPS 601 can be rack-mounted, installed in a lectern with the Extron Half Rack Shelf System, or mounted under a table with the Extron UTS Series Under Table Shelf System.

## FEATURES

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- ▶ **Integrates HDMI, RGB, and audio sources into presentation systems**
- ▶ **Four HDMI inputs and two RGB inputs** – The MPS 601 allows for switching between HDMI and analog video sources.
- ▶ **Digitizes RGB and analog audio signals, and switches them through the HDMI output** – Analog signals are digitized, and switched through the HDMI output along with native HDMI signals, providing a single video format and cable connection to the display.
- ▶ **HDMI audio embedding** – Analog input audio signals can be embedded onto the HDMI output signal.

## FEATURES (Cont.)

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- ▶ **EDID Minder® automatically manages EDID communication between connected devices** – EDID Minder ensures that all sources power up properly and reliably output content for display.
- ▶ **Supports computer-video to 1920x1200, including HDTV 1080p/60 and 2K**
- ▶ **Supported HDMI specification features include data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, Lip Sync, and HD lossless audio formats**
- ▶ **HDCP compliant**
- ▶ **HDCP authentication and signal presence LED indicators**
- ▶ **Automatic color bit depth management** – The switcher automatically adjusts color bit depth of the currently selected HDMI input signal based on the display EDID, preventing color compatibility conflicts between HDMI source and display.
- ▶ **HDMI to DVI Interface Format Correction** – Automatically reformats HDMI source signals for output to a DVI display.
- ▶ **Automatic input cable equalization to 50 feet (15 meters) at 1080p/60 with 8-bit color when used with Extron HDMI Pro Series cable** – Actively conditions incoming HDMI signals to compensate for signal loss when using long HDMI cables, low quality HDMI cables, and source devices with poor HDMI signal output.
- ▶ **Video and audio muting control** – Provides the capability to mute video and audio signals via contact closure or RS-232 control.
- ▶ **Audio input assignment for integration flexibility** – In normal operation, the analog audio inputs follow the corresponding RGB input. Alternately, they can be assigned to follow preset groups of RGB and digital inputs. Grouped inputs can share a common analog audio input. The HDMI output can be set to pass incoming digital audio, embed the analog audio, or to automatically embed the analog audio when no digital audio is detected.
- ▶ **Provides +5 VDC, 250 mA power on the output for external peripheral devices**
- ▶ **Front panel security lockout** – Prevents unauthorized use in non-secure environments. In lockout mode, a special button combination is required to operate the switcher from the front panel controller.
- ▶ **Multiple control options including front panel, RS-232, contact closure, and auto-input switching**
- ▶ **Auto-input switching** – Automatically switches to the input with an active video signal. When multiple inputs are active, the switching priority is configurable.
- ▶ **Contact closure remote control with tally output** – Allows for remote selection of an input channel. +5 VDC is provided to light an LED to indicate the currently selected input.
- ▶ **Rack-mountable, 1U, half rack width metal enclosure**
- ▶ **Includes LockIt® HDMI cable lacing brackets**
- ▶ **Energy-efficient external universal power supply included**

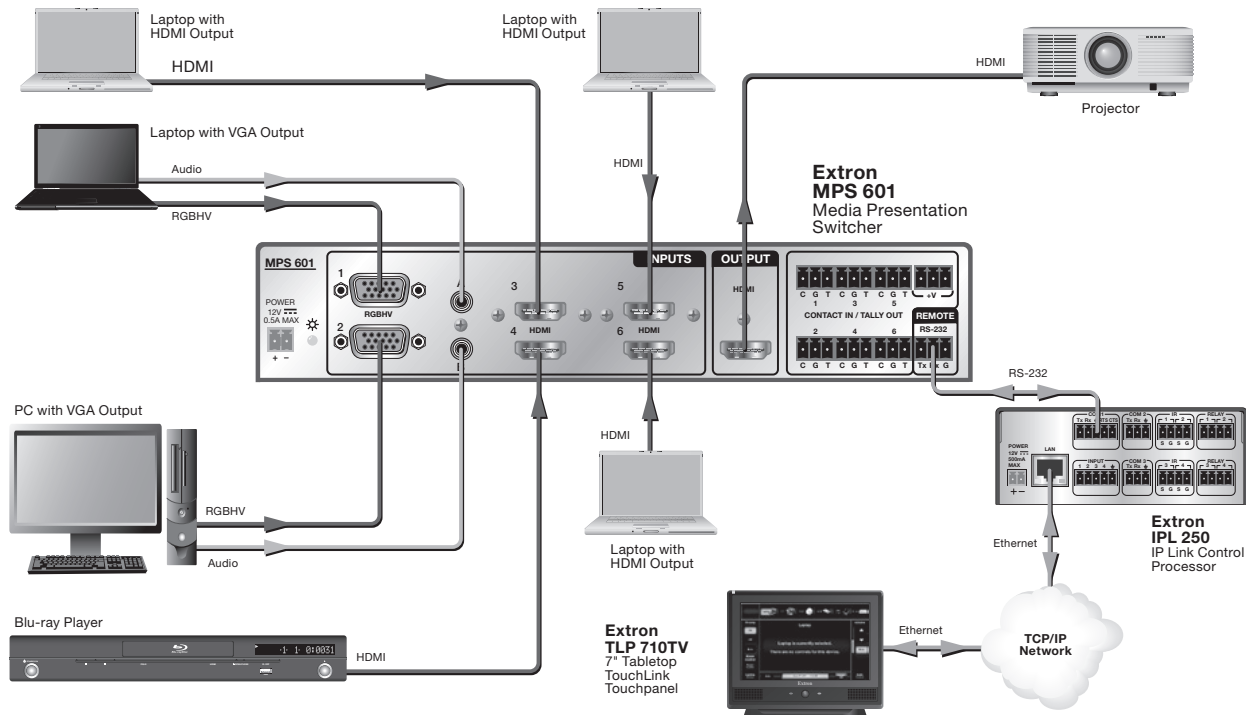
# SPECIFICATIONS

VIDEO	
<b>VGA inputs</b>	
Gain	Unity
Resolution	640x480 @ 60 Hz to 2048x1080 @ 60 Hz
<b>HDMI inputs</b>	
Maximum data rate	6.75 Gbps (2.25 Gbp per color)
Maximum pixel clock	225 MHz
Resolution	1920x1200 @ 60 Hz or 1080p @ 60 Hz and 2K, 12 bit color
Formats	RGB and YCbCr digital video
Standards	DVI 1.0, HDMI, HDCP 1.4
<b>NOTE:</b> The MPS 601 supports TMDS bit rates up to 6.75 Gbps, deep color up to 12-bit, 3D, HD lossless audio, and other HDMI specification features.	
VIDEO INPUT	
<b>Number/signal type</b>	
VGA inputs	2 VGA-QXGA, RGBHV, RGBS
HDMI inputs	4 single link HDMI (or single link DVI-D, with appropriate adapters)
<b>Connectors</b>	
VGA inputs	2 female 15 pin HD
HDMI inputs	4 female HDMI, type A
<b>Nominal level</b>	
VGA inputs	0.7 Vp-p for RGB
<b>Minimum/maximum levels</b>	
VGA inputs	Analog 0.3 V to 1.5 Vp-p with no offset
Impedance	75 ohms
Return loss	< -40 dB @ 5 MHz
Equalization	Automatic. Input cable <50' (15 m) @ 1920x1200, 50 or 60 Hz; or 1080p; 12-bit color and 2K, using Extron HDMI Pro Series cable
<b>NOTE:</b> The transmission distance varies depending on the signal resolution and on the type of cable, graphics card, and display used in the system.	
VIDEO OUTPUT	
<b>Number/signal type</b>	
1 HDMI (or single link DVI-D)	
<b>Re-clocking</b>	
Automatic	
<b>Peripheral device power</b>	
250 mA per output	
AUDIO INPUT	
<b>Connectors</b>	
(2) 3.5 mm, stereo mini jacks; tip (L), ring (R), sleeve (Gnd)	
<b>Input impedance</b>	
>10k ohms unbalanced, DC coupled	
<b>NOTE:</b> 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV = 2 dBu	
CONTROL/REMOTE — SWITCHER	
<b>Serial control port</b>	
1 RS-232, 3.5 mm captive screw connector, 3-pole, rear panel	
<b>Baud rate and protocol</b>	
9600 baud, 8 data bits, 1 stop bit, no parity	
<b>Contact closure</b>	
(6) 3.5 mm captive screw connectors, 3-pole, shared with tally outputs	
<b>Tally output</b>	
(6) 3.5 mm captive screw connectors, 3-pole, shared with contact closure	
<b>Tally output power</b>	
+5 VDC, 0.2 A	
<b>USB control ports</b>	
1 front panel female mini USB, type B	
<b>USB standards</b>	
USB 2.0, low speed	
<b>Program control</b>	
Extron PCS Software for Windows, Extron Simple Instruction Set (SIS™)	

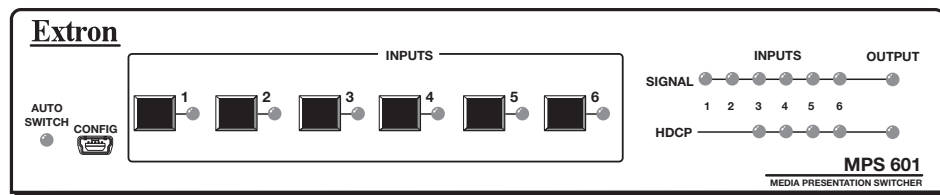
CONTROL/REMOTE CONTACT CLOSURE WITH TALLY OUTPUTS		
<b>Number/type</b>		(6) contact closure inputs and 6 tally outs
<b>Connectors</b>		(6) 3.5 mm captive screw connectors, 3-pole
<b>Contact closure and tally pin configurations</b>		C = contact, G = ground, T = tally, active when contact pin momentarily shorts to ground
GENERAL		
<b>Power supply</b>		External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1A, 12 watts
<b>Power consumption</b>		Device 3.9 watts at 12 VDC Device and power supply 5.3 watts at 12 VDC
<b>Temperature/humidity</b>		Storage -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
<b>Cooling</b>		Convection, no vents
<b>Thermal dissipation</b>		Device 7.4 BTU/hr Device and power supply 12.3 BTU/hr
<b>Mounting</b>		Rack mount Yes, with optional 1U rack shelf Furniture mount Yes, with optional under-desk mounting kit or through-desk mounting kit
<b>Enclosure type</b>		Metal
<b>Enclosure dimensions</b>		1.75" H x 8.75" W x 6.0" D (1U high, half rack wide) 4.4 cm H x 22.2 cm W x 15.2 cm D (Depth excludes connectors.)
<b>Product weight</b>		1.0 lbs (0.5 kg)
<b>Shipping weight</b>		3.0 lbs (1.4 kg)
<b>Vibration</b>		ISTA 1A in carton (International Safe Transit Association)
<b>Regulatory compliance</b>		Safety CE, c-UL, UL EMI/EMC CE, C-tick, ICES, FCC Class A, VCCI, ICES Environmental Complies with the appropriate requirements of RoHS, WEEE
<b>Warranty</b>		3 years parts and labor
<b>NOTE:</b> All nominal levels are at ±10%.		
<b>Model</b>	<b>Version Description</b>	<b>Part number</b>
MPS 601	Six Input HDMI, VGA, & Audio Switcher	60-1377-01
<b>Optional Accessories</b>		
HDMI Micro Series	MicroDigital™ Ultra-Flexible HDMI Cables	26-667-xx
HDMI Ultra Series	Ultra Flexible High Speed HDMI Cables	26-663-xx
HDMI Pro Series	High Speed and Standard Speed HDMI Cables	26-650-xx
Half Rack Shelf System	Half-Rack Width Rack Shelf and Accessories	60-1251-xx
UTS Series	Under Table Shelf System	70-1028-0x



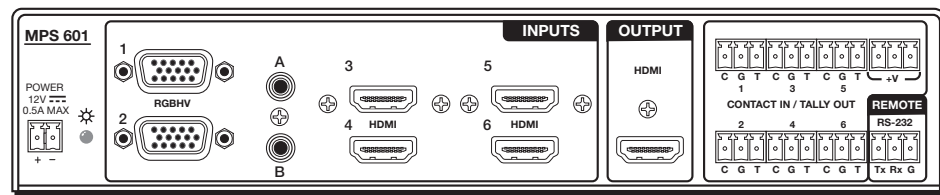
## APPLICATION DIAGRAM



## PANEL DRAWINGS



Front



Back

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# Extron® Electronics

## Half Rack Shelf System

SPACE EFFICIENT MOUNTING SOLUTIONS FOR  
HALF RACK WIDTH AND SMALLER PRODUCTS

8.75" (22.2 cm)



DESCRIPTION

The Extron **Half Rack Shelf System** of rack shelves and related accessories is designed for applications utilizing one-half rack width and smaller products. The compact, 1U half-rack width size allows the mounting of half-, quarter-, and eighth-rack products in space-constrained furniture such as lecterns and cabinets that are not wide enough to support the mounting of full width, 19" rack shelves or electronics. The Half Rack System is comprised of the HRB 109 Basic Rack Shelf; the HRU 109 Universal Rack Shelf Kit, which includes eighth-rack and quarter-rack false faceplates; and HRP 100 Blank Panel. Half Rack System products are finished in a durable gray powder coat finish to match other Extron products.

KEY FEATURES

- ▶ Compact, 1U half-rack width size fits narrow lecterns and cabinets
- ▶ Holds one half-rack, two quarter-rack, or four eighth-rack width products
- ▶ Includes mounting holes for 3", 6", and 9.5" deep Extron products
- ▶ Available in a gray powder coat finish
- ▶ Matching blank filler plate also available

APPLICATION DIAGRAM



Model	Version Description	Part number
HRB 109	1U Basic Half Rack Shelf	60-1251-10



Model	Version Description	Part number
HRU 109	1U Universal Half Rack Shelf Kit	60-1251-20



Model	Version Description	Part number
HRP 100	1U Half Rack Blank Plate	60-1251-01

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## Professional LCD projectors for large venues

The InFocus IN5140 Series of 3LCD projectors are engineered for ease of installation and strength of performance.



Packed into the projector's slim frame are many unique features, such as 360-degree projection, an LED back panel, lens shift memory, and instant stack, which make it easy to either double the brightness or add a fail-safe backup.

- High brightness for sharp, seamless images in high ambient light
- Full range of resolutions including WUXGA
- Four optional lenses to fine-tune projection
- Comprehensive connectivity and control
- 360-degree projection and SplitScreen (except IN5142)
- Full motorized lens shift and focus/zoom

### Optional Lenses

	Part #	F-Stop	Zoom Ratio	Throw Distance	Throw Ratio	Lens Shift (H)	Lens Shift (V)
<b>Ultra Short Throw Lens</b>	LENS-069	F1.8 (f=13mm)	Fixed	0.7~12.4m	0.8	Fixed center	Fixed center
<b>Standard Lens</b>	LENS-070	F1.6~2.0 (f=19~29mm)	x 1.5	Wide: 0.9~18.2m Tele: 1.4~27.5m	1.5~2.2	±10%	IN5142: +10%, -50% IN5144/IN5145: +0%, -50%
<b>Standard Lens (included with IN5140 Series)</b>	LENS-071	F1.6~2.9 (f=24~48mm)	x 2.0	Wide: 1.2~23.2m Tele: 2.3~46.0m	1.5~3.0	±10%	IN5142: +0%, -50% IN5144/IN5145: +11.1%, -50%
<b>Long Throw Lens</b>	LENS-072	F1.7~2.0 (f=46~79mm)	x 1.7	Wide: 2.2~43.8m Tele: 3.7~75.0m	2.8~4.9	±10%	IN5142: +10%, -50% IN5144/IN5145: +0%, -50%
<b>Ultra Long Throw Lens</b>	LENS-073	F1.7~2.0 (f=77~133mm)	x 1.7	Wide: 3.9~72.9m Tele: 6.5~125.3m	4.9~8.3	±10%	IN5142: +10%, -50% IN5144/IN5145: +0%, -50%

\* Product specifications, terms, and offerings are subject to change at any time without notice.

\*\* Actual lamp life may vary based on the ambient environment and projector usage. Conditions that may affect lamp life include temperature, altitude, and rapidly switching the projector on and off.

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## Specifications\*

Specifications*		IN5142	IN5144	IN5145
Native Resolution		XGA (1024 x 768)	WXGA (1280 x 800)	WUXGA (1920 x 1200)
Maximum Resolution		WUXGA (1920 x 1200)		
Display Technology		3LCD		
Brightness		6000 lumens (4800 Eco Mode)	5500 lumens (4400 Eco Mode)	5000 lumens (4000 Eco Mode)
Lamp Life**		2500 hours (3000 hours Eco Mode)		
Lamp Power		330 w (264 w Eco Mode)		
Contrast Ratio		3000:1		
Standard Lens - Throw Ratio		1.5 – 3.0		
- Zoom Ratio		2.0x		
Lens Shift (of Standard Lens)				
- Vertical		+0%, -50%	+11.1%, -50%	
- Horizontal		± 10%		
Aspect Ratio (Native)		4:3	16:10	
Aspect Ratio (Supported)		4:3, 16:10, 16:9, Auto		
Image Width		24 – 480 in / 0.6 – 12.2 m	25.4 – 508.8 in / 0.6 – 12.9 m	
Keystone (Auto)		± 35° vertical / ± 35° horizontal		
Synch - Horizontal Scan Freq		31.5 - 106kHz		
- Vertical Scan Freq		56 - 120Hz		
Connections (Input)		HDMI 1.4 x 2, VGA, BNC, USB Type A x 2, USB Type B, Composite, S-Video, Component, RJ45/LAN, 3.5 mm stereo input x 2, RCA stereo input		
Connections (Output)		Monitor out (VGA), RCA stereo audio out, Wired remote output		
Control		RS232C, RJ45/LAN, Wired remote, AMX Device Discovery, Crestron RoomView Connected		
Audio		16 W (8 W x 2)		
Video Compatibility		Standard (NTSC, NYSC 4.43, PAL/M/N, SECAM), SD (480i, 480p, 576i), HD (720p, 1080i, 1080p)		
Audible Noise (Typical)		37 dB Normal Mode (31 dB Eco Mode)		
Number of Colors		1.07 billion		
Filter Life		20,000 hours		
SplitScreen		No	Yes	
Other Features		Filter Timer, PJImage, PJMessenger, Active Iris, PerfectFit, Lens Shift Memory, DICOM Mode, PJ-Link, Shutter, Installation Template Screen		
Security Features		Kensington Slot, Security Bar, User PIN		
Product Dimensions - W×D×H		19.6 x 18.7 x 5.8 in / 498 x 476 x 147 mm		
Product Weight		19.4 lbs / 8.8 kg		
Shipping Dimensions - W×D×H		26.9 x 21.7 x 9.0 in / 683 x 552 x 229 mm		
Shipping Weight		28.2 lbs / 12.8 kg		
Maximum Altitude		10,000 ft / 3,068 m		
Operating Temperature		32 – 113° F / 0 – 45° C		
Power Consumption		480W at 120V / 455W at 240 V		
Warranty		2-year product warranty, 6-month lamp warranty, 90-day accessories warranty		
Standard Accessories		Standard lens, Lens cover, VGA cable, Remote control (no batteries), Adapter cover, Power cord, User Manual, Safety Card		
Menu Languages		English, French, German, Spanish, Italian, Norwegian, Dutch, Japanese, Simplified Chinese, Traditional Chinese, Korean, Swedish, Russian, Finnish, Polish, Turkish, Portuguese		
Approvals		UL, c-UL, FCC (US/Canada), CE (Europe), C-Tick (Australia)		

PAG-UNV-HD

## Arakno Heavy Duty Geared Projector Mount For Multimedia Projectors up to 100lb (45kg)



The Arakno Heavy Duty Geared Projector Mount is engineered for compact strength, with a capacity to hold a hefty 100-lb multimedia projector. While stout and sturdy in structure, this mount boasts premium adjustability and enhanced functionality. An integrated quick-connect mechanism makes projector attachment or removal easy, while its patented gear technology makes fine-tuning the projector image a cinch.



Max load: 100lb (45kg)

### FEATURES

- Patented gear technology enables effortless adjustment to achieve precise image alignment
- Provides superior range functionality:
  - Tilt:  $\pm 45^\circ$
  - Roll:  $\pm 45^\circ$
  - Swivel:  $360^\circ$
- No tools required for image alignment, dual knobs design provide hassle-free method for adjusting the gears
- Quick-release mechanism to easily service projector
- Spider® Universal Adapter Plate extends up to 17.63" (448mm) to fit most projector models
- All-in-one box solution, includes a ceiling cable management coupler and Peerless' Spider® Universal Adapter Plate



■ **SOLID CONSTRUCTION DESIGN**  
Sturdy construction provides a steady hold, hassle-free installation and total adjustability.

■ **UNIVERSAL COMPATIBILITY**  
Spider® Universal Adapter Plate boasts extendable mounting configuration for increased compatibility

■ **PRECISE IMAGE ALIGNMENT**  
Dual knob functionality enables precise alignment by hand or with the use of an Allen wrench



All-in-one solution



**RoHS**  
2002/95/EC

## Model Numbers

**WARRANTY:** Limited 5-year

**PAG-UNV-HD:** Arakno Heavy Duty Geared Projector Mount for projectors weighing up to 100lb (45kg)

## Product Specifications

	DIMENSIONS (W x H x D)	PRODUCT WEIGHT	LOAD CAPACITY	FINISH	AVAILABLE COLORS
<b>PAG-UNV-HD</b>	8.5"-17.63" x 7.5"-9.21" x 8.5"-17.63" (216-448 x 190-233 x 216-448mm)	4lb (1.81kg)	100lb (45kg)	Scratch resistant fused epoxy	Black

## Package Specifications

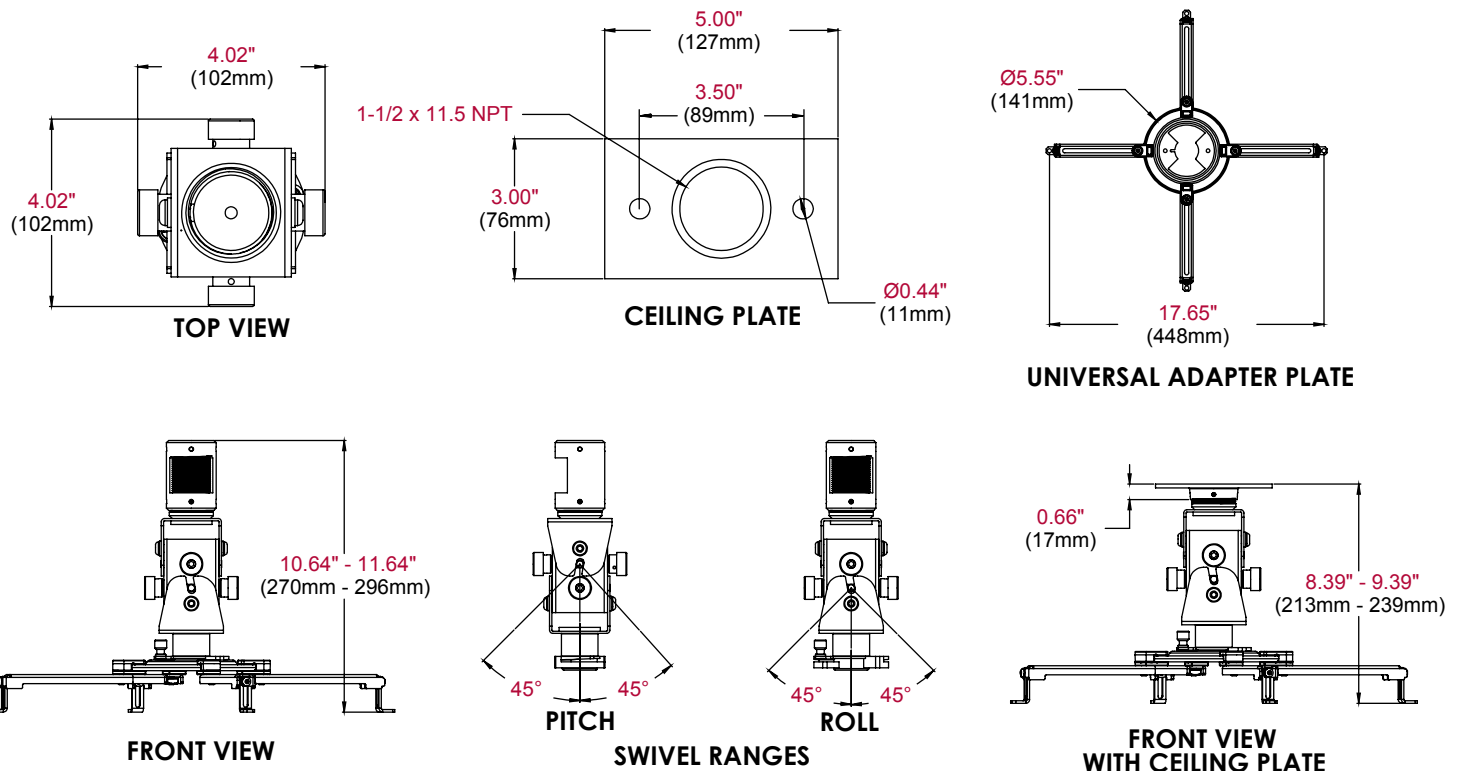
	PACKAGE SIZE (W x H x D)	PACKAGE SHIP WEIGHT	PACKAGE UPC CODE	PACKAGE CONTENTS	UNITS IN PACKAGE
<b>PAG-UNV-HD</b>	9.31" x 4.25" x 12.62" (236 x 107 x 320mm)	6.2lb (2.81kg)	735029265030	Arakno Heavy Duty Projector Mount, Ceiling Plate, Threaded Coupler, Spider® Universal Adapter Plate, Mounting and Projector Attachment Hardware, Assembly Instructions	1

## Accessories

**CMJ Models, ACC570, ACC571, ACC912:** Ceiling Kits  
**ACC840/845:** Anti-Vibration Mount  
**ADJ, EXT Models:** Extension Columns

**ACC830:** Side-to-Side Adjuster  
**PWA14 & EXA/B:** Wall Mount Arm  
**ACC050:** Stability Kit

All dimensions = inch (mm)



## ARCHITECTS SPECIFICATIONS

The mount shall be a Peerless model PAG-UNV-HD and shall be located where indicated on the plans. The finish shall be scratch resistant black aluminum. Assembly and installation shall be done according to instructions provided by the manufacturer.

**MONOPRICE**



VGA Extender PLUS up to 180 Meters  
Product Number: **8806**

The Monoprice VGA Extender Plus allows you run a local VGA video display while simultaneously running a VGA video display in a remote location using convenient, easy to install, Cat 5 cables.

#### FEATURES:

- ■ The extension of VGA signal up to 180 meter away by using the VGA Extender and one CAT.5 cable.
- ■ Equalization length is adjustable.
- ■ VGA signal gain is adjustable.

#### SPECIFICATIONS:

VGA connector type: HD15

Cat5 connector type: RJ45

Max Resolution: 1280x1024 60Hz

Max Distance: 180m (590 ft)

Power Adapter: Fixed AC 100-240V/50-60Hz/0.2A input, DC 5V/1A output

Housing: Metal

Weight: VGA-L transmitter 290g, VGA-R reciever 140g

Dimensions (L x W x H): VGA-L 118 x 75 x 29 mm, VGA-R 92 x 34 x 22 mm

#### PACKAGE CONTENTS:

- ■ VGA Extender Local Unit (Transmitter)
- ■ VGA Extender Remote Unit (Receiver)
- ■ 1 User Manual
- ■ 2 DC 5V/1A Power Adapter
- ■ 1 VGA 1.2M Cable (HD-15 Male-to-Male)

\*Monoprice continually strives to improve its product line to bring our customers the best products available. Therefore, changes may be made to listed specifications without prior notice. Item received may not match photo or specs shown.



**MONOPRICE**



HDMI Extender Using Cat5e or CAT6  
Cable – Extend Up to 98 Feet  
Product Number: **8121**

Use this simple and effective HDMI extender to send High Speed (1080p) HDMI® signals up to 98 feet over Cat5e/6 cable!

Most extenders are small boxes which must be mounted, and which require additional cables to use. While they can usually handle longer distances, if you don't need to take the signal more than 30 meters, this simple pair of extender adapters is the right solution.

Each adapter plugs into your HDMI ports, with the sender in the source device and the receiver at the display. Then just run a pair of Cat5e/Cat6 cables between the adapters and you're in business! You won't need to provide external power – it gets the power it needs from the HDMI source device.

The adapters support up to 1080p resolutions and digital audio, including DTS® Digital, DTS-HD Master Audio™, and Dolby TrueHD™. They support up to 8-bits per channel (24-bit total) Deep Color and HDCP pass-through.

#### **Features:**

- Up to 30 meter transmission distance over Cat5e/6 UTP cable
- Supports up to 1080p resolution
- Supports LPCM, DTS® Digital, DTS-HD Master Audio™, and Dolby TrueHD™ audio
- Supports HDCP pass-through
- 165 MHz/1.65 Gbps bandwidth
- Supports 8-bits per channel (24-bits total) Deep Color
- No setup required, just plug it in and start using it!
- Uses IEEE-568B UTP wiring standard
- Lightweight plastic construction
- 8" cable on each adapter
- Gold-plated HDMI® connectors



## HDMI Extender Using Cat5e or CAT6 Cable – Product Number: **8121**

Specifications	
Input Video Signal	0.5 - 1.0 volts p-p
Input DDC Signal	5 volts p-p (TTL)
Maximum Resolution	1920x1080p
Operating Frequency	50/60 Hz
Video Amplifier Bandwidth	165 MHz / 1.65 Mbps
Maximum Transmission Distance	30 meters
Interlaced Resolutions (50 & 60 Hz)	480i, 576i, 1080i
Progressive Resolutions (50 & 60 Hz)	480p, 576p, 720p, 1080p
External Power Supply	none
Power Consumption (Max)	5W
Cat5e/6 Wiring Standard	IEEE-568B
Adapter Dimensions	2-1/8" long (2-23/32" including cable boot) by 1-7/16" wide by 27/32" thick
Cable Length	8"
Operating Temperature	0° C to +70° C
Operating Humidity	10% to 85% RH (no condensation)
Storage Temperature	-10° C to + 80° C
Storage Humidity	5% to 85% RH (no condensation)
Regulatory Certifications	FCC, CE

HDMI, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries. DTS is a registered trademark and the DTS logos, Symbol, DTS-HD and DTS-HD Master Audio are trademarks of DTS, Inc. Dolby and the double-D symbol are registered trademarks of Dolby Laboratories.



## C2G High-Speed HDMI® Cable with Ethernet

- High-Speed HDMI® Cable with Ethernet
- Supports high bandwidth features such as:
  - Ultra HD
  - 4K @50/60 (2160p)
  - 3D
  - Deep Color
  - x.v. Color™
  - Dolby® True HD
  - DTS-HD Master Audio
  - HDMI-CEC
- Gold plated connectors
- Lifetime warranty

# Specifications: C2G High-Speed HDMI® Cable with Ethernet

## Electrical Characteristics:

Nominal Impedance:	100 ± 10Ω
Nominal Velocity of Propagation:	≤ 1.78ns
DC Resistance:	376Ω/km
Dielectric Strength:	AC 500V - 1 minute
Insulation Resistance:	100Ω

## Physical Characteristics:

Voltage Rating:	30V	Approvals:	RoHS Compliant
Maximum Bend Radius:	90mm	Warranty:	Lifetime
Temperature Rating:	80°C	Package Type:	Polybag

### Conductor 1 (5 pair):

Conductor Type:	30AWG (7/0.10)
Insulation:	Tinned Copper
White,	Foamed PE SKIN
	Red/White, Brown/ White, Blue/
	Green/White, Black/ White
Drain Wire:	O.D. - 0.8mm
	30AWG (7/0.10)
Shield:	Tinned Copper
	Aluminum Foil + Mylar
	100% Coverage

### Overall Cable Construction:

Drain Wire:	30AWG (7/0.10)
	Tinned Copper
Foil Shield:	Aluminum Foil +Mylar
	100% Coverage
Braided Shield:	16/4/0.12
	Aluminum/Magnesium
	50% Coverage
Jacket	PVC
	Black
	O.D. - 6.0 ± 0.2mm

### Conductor 2 (4 conductors):

Conductor Type:	30AWG (7/0.10)
Insulation:	Tinned Copper
	HDPE
	Yellow, Red, Green, Purple
	O.D. - 0.6mm

### Connector:

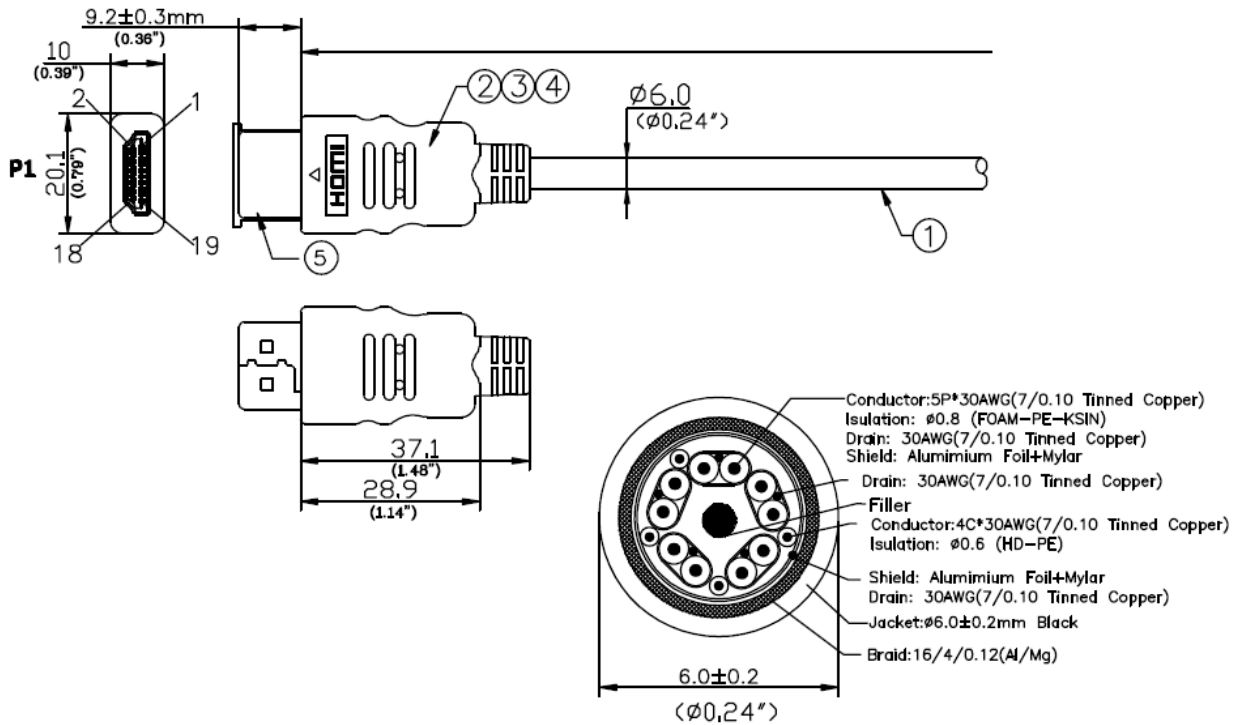
Connector Type:	HDMI® - Type A
Pin Construction:	Phosphor Copper
Plating:	3µm Gold
Insulation:	Black LCP
Hood:	45P™ PVC
	Black
Dimensions (HxWxL):	10.0 x 20.1 x 37.1mm

### Connector:

Connector Type:	HDMI® - Type C
Pin Construction:	Phosphor Copper
Plating:	3µm Gold
Insulation:	Black LCP
Hood:	45P™ PVC
	Black
Dimensions (HxWxL):	8.3 x 14.0 x 32.7mm



# Specifications: C2G High-Speed HDMI® Cable with Ethernet



Part Number	Description	Weight (lbs)
42500	.5m C2G High Speed HDMI® Cable with Ethernet	0.100
40303	1m C2G High Speed HDMI® Cable with Ethernet	0.128
42502	1.5m C2G High Speed HDMI® Cable with Ethernet	0.184
40304	2m C2G High Speed HDMI® Cable with Ethernet	0.240
40305	3m C2G High Speed HDMI® Cable with Ethernet	0.301
40306	1m C2G High Speed with Ethernet HDMI® Mini Cable	0.160
40307	2m C2G High Speed with Ethernet HDMI® Mini Cable	0.200
40308	3m C2G High Speed with Ethernet HDMI® Mini Cable	0.250





General Description

Now with infrared sync function, the SKM 100-835 G3 can tune to a G3 receiver with a simple push of the receivers sync button. Compatible with ew 100 G3 receivers and every vocal style, this hand-held transmitter/microphone combination provides wireless freedom to both performers and presenters alike. With rugged design and powerful sound, it is ideally suited for the stage as it is in the auditorium. Newly revised features such as the enhanced graphic display, easily swappable capsule and included charging contacts make the SKM100-835 G3 a solid choice.

Frequency range 516 ... 558 MHz shown. See variants for alternate frequencies.

Features

- Sturdy metal housing
- 42 MHz bandwidth: 1680 tunable UHF frequencies for interference-free reception
- Enhanced frequency bank system with up to 12 compatible frequencies
- Pilot tone squelch for eliminating RF interference when transmitter is turned off
- Enhanced AF frequency range
- Increased range for audio sensitivity
- Wireless synchronization via infrared interface from receiver
- User-friendly menu operation with more control options
- Illuminated graphic display
- Auto-Lock function avoids accidental changing of settings
- HDX compander for crystal-clear sound
- Battery indication in 4 steps, also shown on receiver display
- Easy-exchangeable microphone modules from evolution series
- Contacts for recharging BA 2015 accupack directly in the transmitter
- Wide range of accessories adapts the system to any requirement

Delivery Includes

- SKM 100-835 G3 handheld transmitter (dynamic, cardioid)
- MZQ 1 microphone clip
- 2 batteries
- Operating instructions

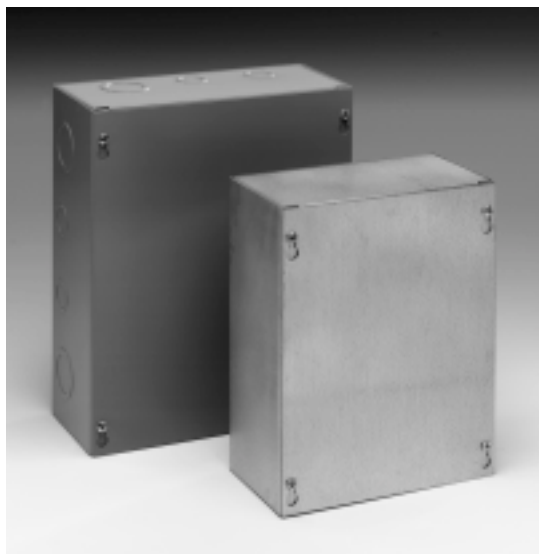
Technical Data

RF frequency range	516 - 865 MHz
Transmission/receiving frequencies	1680
Presets	12
Switching bandwidth	42 MHz
Peak deviation	±48 kHz
Compander	HDX
Frequency response (microphone)	80 - 18,000 Hz
Signal-to-noise-ratio	>110 dB(A)
Total harmonic distortion (THD)	<0.9%
In compliance with	ETS 300422 , ETS 300445 , CE , FCC
RF output power	30 mW
Operating time (transmitter)	>8 h
Dimensions (transmitter)	d=2 in (50 mm) l=10.4 in (265 mm)
Weight (transmitter)	15.9 oz (450 g)
Transducer / microphone type	dynamic
AF sensitivity	2.1 mV/Pa
Sound pressure level (SPL)	154 dB(SPL) max.
Pick-up pattern	cardioid



# Type 1 Screw Cover Enclosures - Painted & Galvanized

## Data Sheet



### Application

- Used as wiring boxes, junction and pull boxes
- Protects against contact with enclosed equipment

### Construction

- Enclosure and cover are fabricated from code gauge steel or galvanized steel, (see table)
- Enclosure body has mounting holes on the back
- Enclosures are available with or without knockouts on the sides, top and bottom ends
- Cover is secured to the body with plated screws
- Keyhole slots provided in the cover allow easy access to the inside without removing the screws
- #10-32 tapped hole provision for optional ground lug kit

### Finish

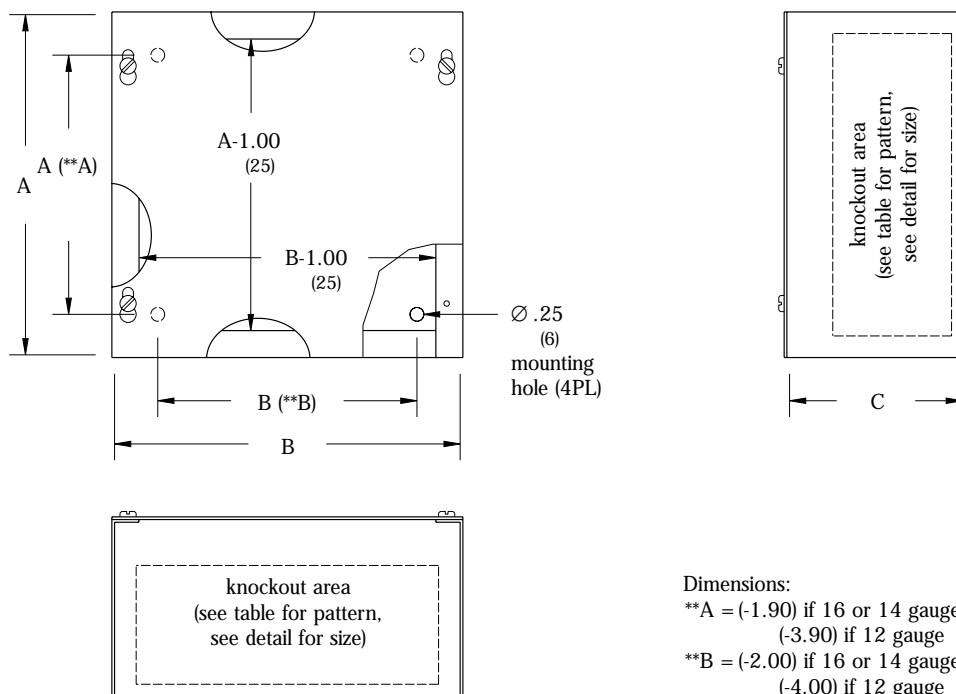
- Wash and phosphate undercoat or galvanized steel
- ANSI 61 gray acrylic electrocoat finish

### Standards

- UL 50 listed, Type 1
- CSA C22.2 No. 40 certified, Type 1
- Conforms to NEMA standard for Type 1
- IEC 60529, IP30

### Accessories

- Ground lug kit
- Touch-up paint
- See Accessories section



Dimensions:

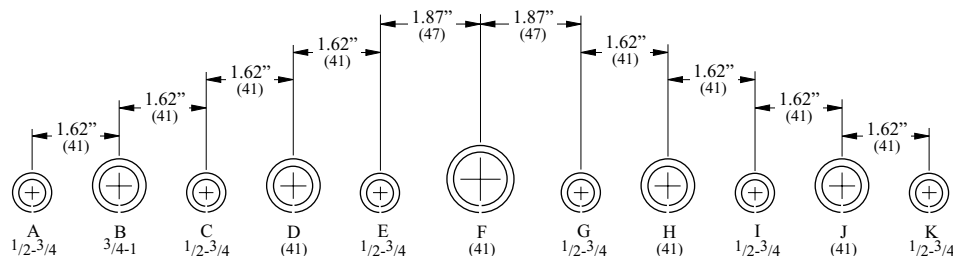
\*\*A = (-1.90) if 16 or 14 gauge  
(-3.90) if 12 gauge

\*\*B = (-2.00) if 16 or 14 gauge  
(-4.00) if 12 gauge

# Type 1 Screw Cover Enclosures - Painted & Galvanized

Catalog Number

Enclosure Catalog Number				Enclosure Size		Gauge	Knockout Pattern	Knockout Pattern
Painted		Galvanized		Height x Width x Depth				
A x B x C								
KO	No KO	KO	No KO	in.	mm		Each Side	Top & Bottom
663 SC	663 SC NK	663 SCGV	663 SCGV NK	6.00x6.00x3.00	152x152x76	16	CDE	CDE
444 SC	444 SC NK	444 SCGV	444 SCGV NK	4.00x4.00x4.00	102x102x102	16	CD	CD
644 SC	644 SC NK	644 SCGV	644 SCGV NK	6.00x4.00x4.00	152x102x102	16	CDE	CD
664 SC	664 SC NK	664 SCGV	664 SCGV NK	6.00x6.00x4.00	152x152x102	16	CDE	CDE
864 SC	864 SC NK	864 SCGV	864 SCGV NK	8.00x6.00x4.00	203x152x102	16	GHIJ	CDE
884 SC	884 SC NK	884 SCGV	884 SCGV NK	8.00x8.00x4.00	203x203x102	16	GHIJ	GHIJ
1084 SC	1084 SC NK	1084 SCGV	1084 SCGV NK	10.00x8.00x4.00	254x203x102	16	GHIJ	GHIJ
10104 SC	10104 SC NK	10104 SCGV	10104 SCGV NK	10.00x10.00x4.00	254x254x102	16	DEFGH	DEFGH
1264 SC	1264 SC NK	1264 SCGV	1264 SCGV NK	12.00x6.00x4.00	305x152x102	16	DEFGH	CDE
1284 SC	1284 SC NK	1284 SCGV	1284 SCGV NK	12.00x8.00x4.00	305x203x102	16	DEFGH	GHIJ
12104 SC	12104 SC NK	12104 SCGV	12104 SCGV NK	12.00x10.00x4.00	305x254x102	16	DEFGH	DEFGH
12124 SC	12124 SC NK	12124 SCGV	12124 SCGV NK	12.00x12.00x4.00	305x305x102	16	DEFGH	DEFGH
15124 SC	15124 SC NK	15124 SCGV	15124 SCGV NK	15.00x12.00x4.00	381x305x102	16	CDEFGHI	DEFGH
15154 SC	15154 SC NK	15154 SCGV	15154 SCGV NK	15.00x15.00x4.00	381x381x102	16	CDEFGHI	CDEFGHI
16124 SC	16124 SC NK	16124 SCGV	16124 SCGV NK	16.00x12.00x4.00	406x305x102	16	CDEFGHI	DEFGH
16164 SC	16164 SC NK	16164 SCGV	16164 SCGV NK	16.00x16.00x4.00	406x406x102	16	CDEFGHI	CDEFGHI
18124 SC	18124 SC NK	18124 SCGV	18124 SCGV NK	18.00x12.00x4.00	457x305x102	16	BCDEFGHIJ	DEFGH
18154 SC	18154 SC NK	18154 SCGV	18154 SCGV NK	18.00x15.00x4.00	457x381x102	16	BCDEFGHIJ	BCDEFGHIJ
18184 SC	18184 SC NK	18184 SCGV	18184 SCGV NK	18.00x18.00x4.00	457x457x102	16	BCDEFGHIJ	BCDEFGHIJ
24124 SC	24124 SC NK	24124 SCGV	24124 SCGV NK	24.00x12.00x4.00	610x305x102	16	BCDEFGHIJ	DEFGH
24184 SC	24184 SC NK	24184 SCGV	24184 SCGV NK	24.00x18.00x4.00	610x457x102	16	BCDEFGHIJ	BCDEFGHIJ
24244 SC	24244 SC NK	24244 SCGV	24244 SCGV NK	24.00x24.00x4.00	610x610x102	14	BCDEFGHIJ	BCDEFGHIJ
30184 SC	30184 SC NK	30184 SCGV	30184 SCGV NK	30.00x18.00x4.00	762x457x102	16	BCDEFGHIJ	BCDEFGHIJ
30244 SC	30244 SC NK	30244 SCGV	30244 SCGV NK	30.00x24.00x4.00	762x610x102	14	BCDEFGHIJ	BCDEFGHIJ
36244 SC	36244 SC NK	36244 SCGV	36244 SCGV NK	36.00x24.00x4.00	914x762x102	14	BCDEFGHIJ	BCDEFGHIJ
-	30304 SC NK	-	30304 SCGV NK	30.00x30.00x4.00	762x762x102	12	-	-
-	36304 SC NK	-	36304 SCGV NK	36.00x30.00x4.00	914x762x102	12	-	-
-	36364 SC NK	-	36364 SCGV NK	36.00x36.00x4.00	914x914x102	12	-	-
-	48364 SC NK	-	48364 SCGV NK	48.00x36.00x4.00	1219x914x102	12	-	-
-	48484 SC NK	-	48484 SCGV NK	48.00x48.00x4.00	1219x1219x102	10	-	-



## Conduit Sizes

## Knockout Detail

**Note:** See table for applicable knockout pattern.

# RAPCO ACCESSORIES

## RAPCO AUDIO TRANSFORMERS

MODEL	DESCRIPTION
CXF	AN OUTPUT ISOLATION TRANSFORMER
SST	SIGNAL SPLITTER TRANSFORMER
DXF	DUAL OUTPUT "SPLITTING" TRANSFORMER
DBT	DIRECT BOX TRANSFORMER
NTE-1	SIGNAL ISOLATION TRANSFORMER
NTE-4	IMPEDANCE CONVERTER

TRANSFORMERS	CXF	DXF	SST	DBT	NTE-1	NTE-4
NOMINAL IMPEDANCE	600 OHMS	600 OHMS	600 OHMS	600 OHMS	200 OHMS	1k OHMS
TURN RATIO	1:1	1:1:1	1:1	6:1	1:1	1:4
INSERTION LOSS	-1dB	-4dB	-1dB	-24dB	-24dB	-24dB
HARMONIC DISTORTION	<1% @ +2dBm (20HZ-60KHZ)	<1% @ -8dBm (20HZ-60KHZ)	<1% @ +4dBm (40HZ-60KHZ)	<1% @ +3dBm (40HZ-90KHZ)	<1% @ +3dBm (40HZ-90KHZ)	<1% @ +3dBm (40HZ-90KHZ)
FREQUENCY RESPONSE	+0, -0.5dB (15HZ-60KHZ)	+0, -1dB (15HZ-30KHZ)	+0, -0.5dB (20HZ-60KHZ)	+0, -2dB (20HZ-90KHZ)	+0, -2dB (30HZ-20KHZ)	+0, -2dB (30HZ-20KHZ)
RISE TIME	2 ms	7 ms	2.5 ms	3 ms	3 ms	3 ms

## TRANSFORMER COLOR CODE

	Primary			Secondary1			Secondary 2		
Model	Hot	Cold	Shield	Hot	Cold	Shield	Hot	Cold	Shield
CXF	Blk	Red	Blue	Wht	Yel	Grn			
DXF	Blk	Red	Blue	Wht	Yel	Grn	Pink	Gray	Brown
SST	Blk	Red	None	Wht	Yel	None			
DBT	Blk	Red	None	Wht	Yel	None			
NTE-1	Red	Blk	None	Wht	Yel	None			
NTE-4	Wht	Yel	None	Red	Blk	None			

# Electrical Extension Cords

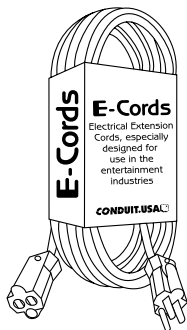


**E-Cords™**  
BRAND

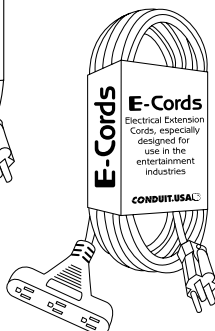
## E-Cord brand of electrical extension cords

The first extension cords especially designed for the entertainment industry. E-Cords are an extremely durable, yet flexible cord line in a variety of lengths and gauges for different applications. E-Cords are solid black, for easy concealment on stage and are available in 12, 14 and 16 gauge.

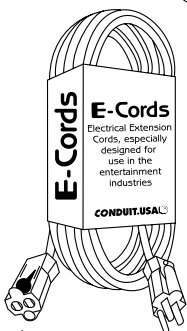
- three end configurations:
  - standard
  - power block 3-outlet connectors for powering multiple items from a single cable
  - Tru-Line locking connectors provide a secure connection to prevent unexpected power loss from pulled cables
- Warranty
  - 12 gauge, 5-year
  - 14 gauge, 3-year
  - 16 gauge, 1-year



Standard

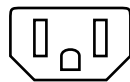


Power Block



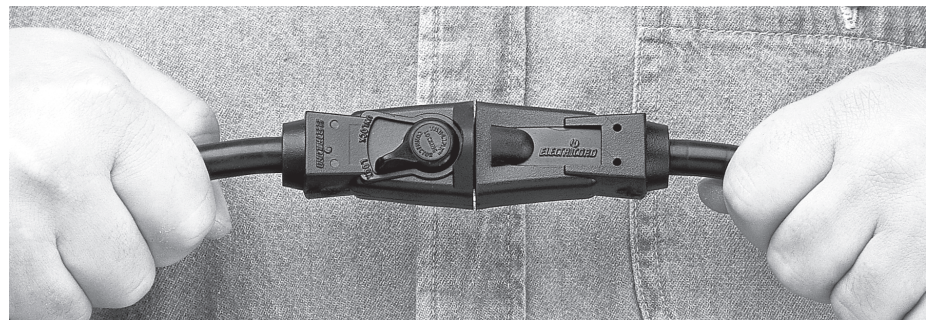
Tru Link

Cam Lock on female end



### Model No. Description

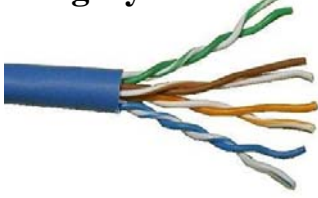
E163-6	Electrical Extension Cord, 16 g., 3-con, 6'
E163-12	Electrical Extension Cord, 16 g., 3-con, 12'
E163-25	Electrical Extension Cord, 16 g., 3-con, 25'
E163-50	Electrical Extension Cord, 16 g., 3-con, 50'
E143-1PB	Electrical Extension Cord, 14 g., 3-con, 1' w/Power Block
E143-6PB	Electrical Extension Cord, 14 g., 3-con, 6' w/Power Block
E143-12PB	Electrical Extension Cord, 14 g., 3-con, 12' w/Power Block
E143-25PB	Electrical Extension Cord, 14 g., 3-con, 25' w/Power Block
E143-50PB	Electrical Extension Cord, 14 g., 3-con, 50' w/Power Block
E123-25	Electrical Extension Cord, 12 g., 3-con, 25'
E123-25PB	Electrical Extension Cord, 12 g., 3-con, 25' w/Power Block
E123-50	Electrical Extension Cord, 12 g., 3-con, 50'
E123-50PB	Electrical Extension Cord, 12 g., 3-con, 50' w/Power Block
E123-100	Electrical Extension Cord, 12 g., 3-con, 100'
E123-25TL	Electrical Extension Cord, 12 g., 3-con, 25' w/Tru Link
E123-50TL	Electrical Extension Cord, 12 g., 3-con, 50' w/Tru Link
E183-2IEC	Electrical Extension Cord, 18 g., 3-con, IEC female to Edison male, 2'



Tru Link locks the extension cords together so that they will NEVER come undone, no matter how hard you pull!\*

\* OK, OK, you really strong guys could probably prove this wrong.

## Technical Data Sheet- Category 5E Network



## WEST PENN WIRE

2833 West Chestnut Street  
Washington, PA 15301  
Toll Free: (800) 245-4964  
Fax: (724) 222-6420  
[www.westpenn-wpw.com](http://www.westpenn-wpw.com)

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<b>PART NUMBER:</b>	<b>4245</b>
<b>DESCRIPTION:</b>	24 AWG.- 4 PAIR Solid bare copper conductors, unshielded with an overall jacket.
<b>NEC RATING:</b>	CMR
<b>APPROVALS:</b>	(UL) C(UL) Listed or c(ETL)us Listed
<b>APPLICATION:</b>	Indoor - Category 5E Applications- Ethernet, IP Cameras, Digital Integration Meets TIA/EIA 568B.2 Category 5e Specifications

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### Construction Parameters:

Conductor	24 AWG Bare Copper
Stranding	Solid
Number of Conductors	8 (4 Pair)
Insulation	Thermoplastic - .008"
Shield	None
Drain	None
Jacket Material	PVC
Overall Cable Diameter	0.202" Nom.
Approximate Cable Weight	23 Lbs/1M' Nom.
Flame Rating	UL 1666

---

### Electrical & Environmental Properties:

Operating Temperature Rating	-20°C To +60°C
Operating Voltage Rating	300 V RMS
DC Resistance per Conductor @ 20deg C	9.38 Ohms/100m Nom.
Mutual Capacitance	14pf/ft Nominal
Nominal Impedance	100 Ohms+/-15% (1-100Mhz)
Velocity of Propagation	66% Nominal
Delay Skew	45ns/100m MAX
Standards	TIA/EIA568-B.2
Insulation Colors	1.Blue/White-Blue, 2. Orange/White-Orange 3. Green/White-Green, 4. Brown/White-Brown Gray, White, Blue- Others Available
Jacket Color	Example: 4245-GY
RoHS Compliant	Yes

## Electrical Specifications:

Frequency: MHz	1	10	25	100	200
Insertion Loss: dB/100m	1.8	5.8	9.3	19.6	28.8
NEXT: dB/100m	80	64	59	50	46
ACR: dB/100m	70.3	50.9	41.1	40.3	35.8
PS-NEXT: dB/100m	73	58	52	43	40
PS-ACR: dB/100m	66.3	46.9	37.1	17.3	3.3
ELFEXT: dB/100m	67.8	47.8	39.8	27.8	21.8
PS-ELFEXT: dB/100m	64.8	25	36.8	24.8	18.8
RL: dB	20	25	24.3	20.1	18

## Mechanical Properties:

Max. Recommended Pull Tension

25 lbs.

Min. Bend Radius (Install)

4x cable OD- 1inch Min.

## Accessories:

### Connectors: Jacks

KJ458MT-C5E-xx

Xx: BK,BU, WH, YE, RD

### Connectors: Plugs

32-EZP –

EZ Plugs

32-5198UL

Cat 5E

### Boots

32-1900-xx – xx: Colors

### Tools:

TL-135

110 Punch down tool

TL-114

Crimp Tool

### Cable Assemblies:

C5EC-114CC-xx

CC: Color: BK, BU, GY, RD, WH, YE

Xx: Length Footage: 3,7,10,15,20,25

### Patch Panels:

12458MD-C5E 12 port Cat5E Patch Panel

24458MD-C5E 24 port Cat5E Patch Panel

48458MD-C5E 48 port Cat 5E Patch Panel

Specification Issue Date: 11/12

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Standard Lengths are 1000ft.

The Jacket is sequentially footmarked.

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